UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northeast Fisheries Science Center
166 Water Street
Woods Hole, MA 02543-1026

October 16, 2002

9out Fed

Ms. Katrina Van Dine
SBNMS Management Plan Coordinator
175 Edward Foster Road
Scituate, Massachusetts 02066

Dear Ms. Van Dine:

The National Marine Fisheries Service's/Northeast Fisheries Science Center (NMFS/NEFSC) submits the following comments for the Management Plan review being conducted by the Gerry E. Studds/ Stellwagen Bank National Marine Sanctuary (SBNMS). The management plan scoping process has been focusing on the following issues: alteration of sea floor habitat and ecosystem protection; marine mammal protection; water quality; public awareness and effective enforcement. NMFS has the primary management responsibilities for fisheries and endangered species/marine mammals under the mandates of the Magnuson-Stevens Fishery Conservation and Management Act (MFCMA), Endangered Species Act (ESA), and Marine Mammal Protection Act (MMPA). This jurisdiction extends to waters within the sanctuary's boundaries as well as externally which requires coordination between Craig MacDonald, Superintendent of the SBNMS, and Pat Kurkul, NMFS Northeast Regional Administrator, on matters of mutual interest and concern.

The SBNMS employs an ecosystems-based approach to management, while the NMFS Fishery Management Plans (FMPs) and Take Reduction Plans (TRP) for marine mammals tend to be oriented toward individual species/species complexes (multispecies groundfish). It is important that the SBNMS not enact regulations that conflict with the FMPs developed by NMFS and the New England Fishery Management Council (NEFMC) or the Seasonal Area Management (SAM) and Dynamic Area Management (DAM) regulations that NMFS develops to protect cetaceans. Proactive consultation between our two organizations should prevent any misunderstandings and allow the National Oceanic and Atmospheric Administration (NOAA) to speak with one voice on these matters and not sow public confusion. In regards to potential impacts of commercial fishing gear on benthic Essential Fish Habitat (EFH) and the recovery from the cessation of fishing, our scientists have conducted studies within the Closed Areas on Georges Bank. We stand ready to share this ongoing research with the SBNMS staff, and look forward to comparing this with studies being conducted within the SBNMS. Our scientists have also given some thought to ecosystems-based approaches to fisheries management and we could share this information with you. If the SBNMS plans to develop Marine Protected Areas (MPAs) or propose designation of bottom areas as Habitat Areas of Particular Concern

(HAPC) within the sanctuary's boundaries, these proposals should be discussed with the Northeast Regional Office (NER) and vetted before the NEFMC, since they are likely to effect commercial/recreational fishers.

For marine mammals that interact with fixed fishing gear NMFS has developed a variety of management tools (SAMs, DAMs, etc.) intended reduce these impacts. The agency has established Take Reduction Teams (TRT) to develop TRPs and the NEFSC Protected Resources Branch scientists support this endeavor. We will be glad to share the products from this work with the SBNMS staff in support of their resource protection mission. Similar to the situation with fisheries management consultation/coordination between the SBNMS and NMFS/NER may be required to maximize protection of these resources.

The NEFSC conducts a variety of surveys on the regional distribution/abundance of fish/shellfish species and marine mammals that could provide a context for site specific surveys conducted by the SBNMS. Some concern has been expressed by the public about the possible effects of the Massachusetts Water Resources Authority's (MWRA) ocean outfall on the fish and marine mammal populations within the SBNMS. If this proves to be a problem, then the water quality regulatory authorities (U.S. Environmental Protection Agency and Massachusetts Department of Environmental Protection) need to fund a site specific study, since our survey sampling intensity is not intended to address site specific problems. Since the MWRA Outfall Monitoring Scientific Advisory Panel (OMSAP) is holding scientific workshops to evaluate changes in the MWRA's monitoring program, this would appear to be the appropriate venue to address site specific programs for examining the potential impacts of the outfall pipe on fish and marine mammal populations in adjacent waters.

Thanks for your consideration in this matter.

Sincerely,

John Boreman
Acting Science and Research Director

Scoping comment

New England Fishery Management Council
50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
Thomas R. Hill, *Chairman* | Paul J. Howard, *Executive Director*

90+ Fed

October 2, 2002

Dr. Craig MacDonald
Stellwagen Bank National Marine Sanctuary
175 Edward Foster Road
Scituate, MA 02066

Attn: Management Plan Review Coordinator

RE: Public Scoping Comments on the Gerry E. Studds Stellwagen Bank National Marine Sanctuary Management Plan Review

Dear Dr. MacDonald:

Thank you for the opportunity to provide input into the scoping process for the SBNMS Management Plan Review. The New England Fishery Management Council (NEFMC) looks forward to working closely with the Sanctuary staff during this review process.

I have reviewed the SBNMS *Management Plan Review Update: 1998-2002* and believe the report identifies valid management issues. These are Alteration of Seafloor Habitat and Ecosystem Protection, Impacts of Human Activities on Marine Mammals, Condition of Water Quality, Lack of Public Awareness, and Effective Enforcement.

As you know, over the last 25 years (well before the Sanctuary was established), the Council developed and NMFS implemented numerous regulations restricting fishing activities within the Sanctuary boundaries. I believe that any future restrictions on fishing activities in the Sanctuary should continue to be the responsibility of the New England Fishery Management Council because of the Council's authority to manage fisheries in the EEZ. I strongly support your plan to work cooperatively with NMFS and the NEFMC in addressing Sanctuary efforts, especially those that may impact recreational and commercial fishing activities.

I look forward to working with you on this and other issues throughout the management plan review process. I also look forward to a closer working relationship between the Sanctuary and the Council. If you have any questions about these comments or suggestions on timing for Council involvement, please contact me.

Sincerely,

Paul J Howard

Paul J. Howard
Executive Director

Mr. C. J. Collins,
Alkhurst Farm,
Hawtham Lane,
Four Marks,
Nr. Alton,
Hampshire
GU34 5AU,
United Kingdom.

12/10/02

Dear Sir/Madam,

Re: Stellwagen Maine Sanctuary

I write in support of the issues raised by the Whale Centre of New England regarding the Stellwagen Sanctuary.

It is vitally important, not only for the region but for Whale protection in general that the key issues are addressed. In particular;

- There should be speed restrictions for all maine vessels in the area and particularly around whales.
- There should be some restrictions regarding the boats that are allowed to operate in the area
- The buffer zone around Stellwagen Bank needs to be protected.

I appreciate in all of this the livelihoods of many people need to be protected but with the right will and effort there is room for both whales and man.

Yours sincerely,

6 Kimball Lane
Northborough, MA 01532
October 11, 2002

Dr. Craig Macdonald, Superintendent
Stellwagen Bank National Marine Sanctuary
175 Edward Foster Rd.
Scituate, MA 02066

Dear Craig:

Thank you for the copy of "The State of the Sanctuary Report" and Management Plan Review Update: 1998-2002. The report(s) provide adequate background description of the key natural resources and associated management issues to stimulate the public's thinking and feedback. The opinions, comments, and recommendations received should greatly help develop potential management options and crucial decisions about the Sanctuary's future.

In designating Stellwagen Bank as a National Marine Sanctuary, Congress has entrusted NOAA with caring for an incredible natural resource treasure. The waters and submerged lands comprising the sanctuary and all biological life within its boundaries are now public trust resources. This sanctuary as with our national wildlife refuges and national parks represent our ecological heritage. Implicit in the responsibility of protecting this natural resource is the necessity of developing and maintaining a high level of public trust and credibility. There are many current activities and uses that, in my opinion, are resulting in significant cumulative impacts to the biodiversity and ecological integrity of the sanctuary. These activities are also directly conflicting with NOAA's/Sanctuary Management Staff's ability to accomplish its missions and that of the sanctuary's. Any and all public uses, recreational and/or commercial, must be secondary to the primary goals and mission of the sanctuary. Specifically, the mission and broad goals of the sanctuary are to protect marine biodiversity, ecological integrity, and cultural resources.

The following discussion points and recommendations I offer, to fulfill the requirements of NEPA and strengthen our decisions relative to the goals and objectives of the sanctuary's management plan:

--- Future management options should include 1) complete closure/prohibition to commercial fishing activities i.e. gill netting, trawling, lobstering; 2) zoning the sanctuary for particular uses in certain areas

--- Compatibility determinations need to be made for the current activities and criteria developed if not already available, to support management decisions to limit or prohibit an activity or use. Are the current permitted uses within Sanctuary boundaries considered compatible with the biodiversity, ecological health and integrity, cultural resource protection goals? If not, why not?

--- Establishing new marine sanctuaries such as Jeffrey's Ledge should be incorporated into the management plan options.

--- Maintaining and protecting the established research area should be a subgoal or objective of the management plan; monitoring should also be an objective of the plan

--- Integrate the Stellwagen Bank Marine Sanctuary management plan with NOAA's Strategic Plan; there should be over arcing management goals and objectives

--- Discuss how the Sanctuary and its management plan fits into or complements other regional (Gulf of Maine) and national ocean management plans and initiatives

--- Discuss the Sanctuary in relation to the larger Gulf of Maine Ecosystem to which it belongs

--- Identify and discuss threats to the biological diversity, overall health and ecological integrity of the Sanctuary. The issues identified in your management Plan Update speaks directly to this topic. What are the cumulative impacts to the natural resources and to the mission/purpose for which the Sanctuary was established?

--- Are the purposes of the Sanctuary and mission of the national marine sanctuary system identified and upheld? If not why not?

--- An impact analysis of the major issues identified is required to fulfill NEPA and support SBNMS and SAC decision making.

In 1974, '75 and '76, I participated in various ocean survey and diving operations conducted by Dr. Richard Cooper, NMFS, Woods Hole as part of a five year herring spawning study under NOAA's Manned Undersea Science and Technology Program (MUST). SCUBA, research submersible, benthic grab samples, robotic u/w photographic sled, and a 50-foot saturation habitat were among the equipment used in the surveys. The following is a list of references that may provide useful information for our planning process. Reports on these studies should be available at the NMFS's Northeast Center Lab, Woods Hole or NOAA's MUST Office. Also available somewhere should be 2000-3000 underwater photos from Stellwagen Bank and Jeffery's Ledge. You might check with Dick on this Craig.

*** Oct. 4 through Nov. 4, 1974. Herring Spawning Study Jeffery's Ledge –observations and photo documentation of historic herring spawning egg beds. See MUST Fiscal Year Reports for the years 1974-1980

*** 1975 (Aug. –Nov.) First International Saturation Study of Herring and Hydroacoustics. Jeffrey's Ledge, Gulf of Maine. See Beaumariage, Donald C. 1976. Offshore Technology Conference. OTC Paper #2520. Note: we had 12 transect lines, each 300 meter in length running along the bottom out from the U/W Habitat site at Jeffrey's Ledge. More than 2000 photographs were compiled of the benthic community.

*** 1976 NOAA Interagency Submersible Program, MUST Office. Part I 14-17 June, Stellwagen Bank—Wildcat Knoll Sector. A series of dives made across the southwestern part of Stellwagen Bank and Wildcat Knoll to a depth of about 1,000 feet in Wilkinson Basin; Part II 18-23 June, Stellwagen Bank, Wilkinson Basin, Cape Ann Sector. Dives made in the northern part of Stellwagen and proceeded northeastward into Wilkinson Basin and returning westward

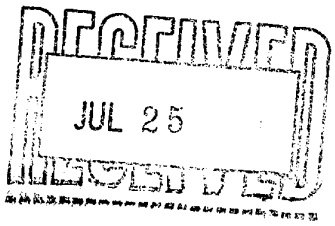
toward Cape Ann. Both SCUBA and submersible dives made to photograph midwater macroinvertebrates.

*** Alan W. Hulbert et.al. 1982. Ecosystem Definition and Community Structure of the Macrobenthos of the NEMP Monitoring Station at Pigeon Hill in the Gulf of Maine. NOAA Tech. Mem. NMFS-F/NEC-14. Note: This is on a section of Jeffrey's Ledge. Photo transects established and monitored since 1978. 149 boreal benthic species identified.

Thank you for the opportunity to comment and I look forward to working with you and the SAC members on developing the management plan.

Sincerely,

Gib Chase
SAC Conservation Committee



GEORGE RICHERT
30 CORNHILL TERRACE #503
BOSTON, MA
02108-2596

DEAR CRAIG,

CAN'T BELIEVE YOUR MAILING JUST FROM GOING OUT TO SEE THE WHALES LAST LABOR DAY!

SOME ~~THOUGHTS~~

(1) ERROL FLYNN WROTE A BOOK BE MEN, ALSO MENTION IN MY WICKED WAYS SAILING IN CARRIBEAN IN A STORM AND THROWING OUT 2 ANCHORS AND WATCHING THEM FLOAT HYDRO-AERO DYNAMICS

2) GOT TAKEN TO YANKEE STADIUM SAT A FEW ROWS BACK OF WHERE GEORGE SIT ON THE VISITOR'S SIDE SO HE CAN SEE WHATS GOING ON IN HIS OWN DUGOUT. NEXT DAY PROBABLY SEEING THE OUTFIELD WALL WONDERED IF THERE ONCE WAS A CARRIBEAN SEA WALL THAT FORMED A LAKE THAT COLUMBUS HAD PLANNED TO RUN INTO

PERSPICACIOUSLY YOURS,

George Richert

INTEGRITY & GREATNESS
MEANS
STRUGGLE & CONVICTION

To the Gerry E. Studds Stellwagen Bank National Marine Five year Management Plan Managers,

We all understand the difficulties that face the advisory council of the Stellwagen Bank. This letter is written to voice and hopefully recommend an opinion based on observation and research. We understand that you are researching many issue so we have focused on one topic that effects the protection of the ecosystems, recreational fishing. The following paper discusses our recommendations for fishing in Stellwagen bank:

1.) Acquisition of baseline date

2.) Construction of regulations

   a. Species specific

   b. Season specific

3.) Site specific Fishery Management Plan

4.) Initiation of Zoning Areas

Recommendations for the Stellwagen Bank:

ISSUE 1: Alteration of Seafloor Habitat and Ecosystem Protection

- Recreation:
  - Fishing

The Stellwagen Bank was designated as a National Marine Sanctuary in November 1992. It is located between Cape Cod and Cape Ann, Massachusetts, and is heavily used for recreational purposes such as fishing and whale watching. The Stellwagen Bank National Marine Sanctuary wants to encourage commercial and recreational use of the Sanctuary, however, not to the extent that the degradation of resources occurs.

In Stellwagen Bank there is an abundant amount of recreational fishing, which occurs off and on depending on the season. The idea of recreational fishing is encouraged, however, the overall wellness and abundance of the species that inhabit the Bank is of the most concern. We would recommend that baseline data begin to be collected in order for future scientist to determine the current state of the fish population as well as give recommendations for regulations regarding the amount of fishing allowed per season. North Carolina has instituted a successful plan that allows them to manage fishing as well as collect baseline data for future research purposes.

Currently there is no recreational fishing activity specific to Stellwagen Bank that is subject to regulation. Due to the fact that there are several species being fished at different times of the year, we propose that limitations on recreational fishing be species and time specific, depending on the results acquired from the baseline data. Preventative measures such as a site-specific fishery management plan, should be researched and

compiled in order to prevent species depletion. The Fish and Game Department of California has instituted a fishery management plan that allows them to gain a sustainable species biomass all the while allowing for fertile fishing seasons.

In order to protect the ecosystems and the species that live in Stellwagen Bank we recommend that zoning areas instituted. This will allow for Stellwagen Bank to still be used by the public for fishing, however, it will also protect and preserve the Bank so that a sustainable environment can be obtained. Other counties have adopted the zoning concept. Minnesota as well as North Carolina has both learned about the importance of preserving certain ecosystems through the institution of zoning. Area Zoning is a program that restricts specific areas of Stellwagen Bank and makes them off limits to public interference. These designated areas are then preserved and maintained in their current natural state.

We believe that the key to preserving the mission of the Stellwagen Bank National Marine Sanctuary is through proper management of resources. In order to achieve this we must first research the available resource through the application of scientific methods and the acquisition of baseline data. Through the analysis of the data the proper regulations should be instituted in order to protect each individual species involved. The designation of specific zones and proper fishery management plan will help to achieve a sustainable sanctuary.

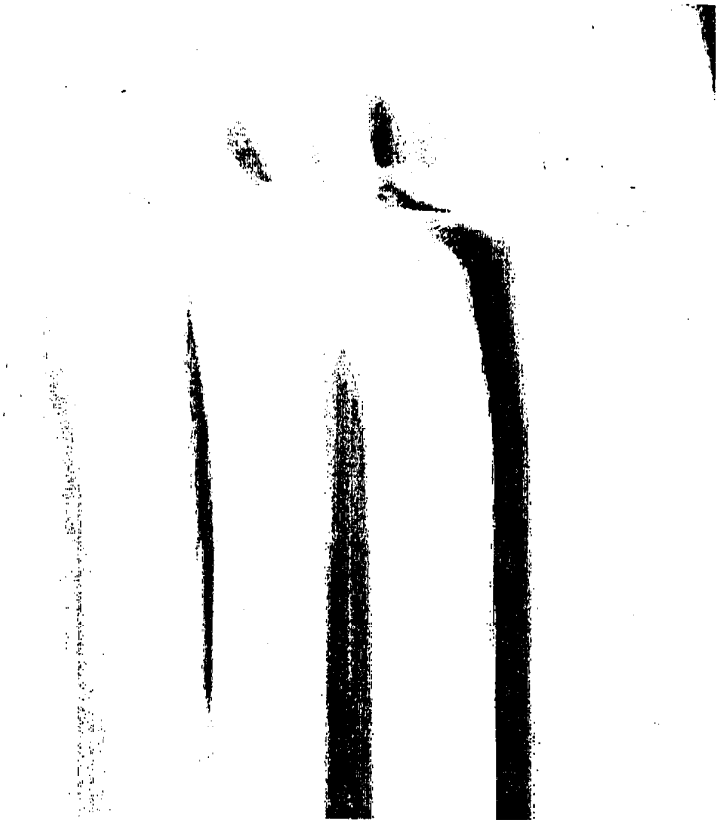
Sincerely,
Eileen Estrada
Armando Gundin
Coastal Zone Management
Massachusetts Maritime Academy

Eileen Estrada
Armando Gundin
Prof. Yazbek
Coastal Zone Management
October 3, 2002

Recommendations for the Stellwagen Bank:

ISSUE 1: Alteration of Seafloor Habitat and Ecosystem Protection

Eilecn Estrada
Armando Gundin
Prof. Yazbek
Coastal Zone Management
October 3, 2002



Association to Preserve Cape Cod, Inc.

P.O. Box 398, Barnstable, Massachusetts 02630-0398
508-362-4226 • Toll-free 877-955-4142 • Fax 508-362-4227
E-mail: info@apcc.org • Web site: http://www.apcc.org

October 18, 2002

Dr. Craig MacDonald
Stellwagen Bank National Marine Sanctuary
175 Edward Foster Rd.
Scituate, MA 02066

NGO

Dear Dr. MacDonald:

The Association to Preserve Cape Cod (APCC) appreciates the opportunity to offer comments on the Stellwagen Bank National Marine Sanctuary (SBNMS) Management Plan review. APCC is a 5,500-member nonprofit organization that has been the leading advocate for the protection of Cape Cod's natural resources and coastal environment for 34 years. We commend Stellwagen Bank National Marine Sanctuary for the work it has done thus far in protecting and conserving the natural resources of the Sanctuary.

The ability of the Sanctuary to protect and sustain its natural resources if of primary importance. We encourage a balance that will accommodate commercial and recreational uses, as mandated by federal law, while protecting and preserving resources more rigorously than is being done at present. In many ways, Stellwagen Bank National Marine Sanctuary is a sanctuary in name only. We encourage SBNMS to be a sanctuary in action as well by implementing regulations that are specifically aimed at protecting wildlife, habitat and biological diversity. Limits set in place now to protect the Sanctuaries resources from overuse will likely prevent the need for more severe limits later.

It is imperative that adequate funding be available to support a rigorous monitoring program at the Sanctuary. The current program of monthly sampling in August and September should be expanded. APCC supports the continued coordination of the sampling regime with the Massachusetts Water Resource Authority outfall project's sampling program as well as other monitoring projects.

There is a need for more information on habitats and habitat use by invertebrates, fish and marine mammals. The SBNMS should foster increased cooperation with government agencies and private organizations, such as the Center for Coastal Studies, to strengthen research and monitoring programs. All of the research and monitoring results should be made available through technical reports and gray literature. A list of peer-reviewed publications on the web site would also be useful.

Stellwagen Bank is one of the most important feeding grounds for large whales, including the endangered northern right whale. While whale watching is enjoyed by many and economically important, there has been concern that the whale watching industry permits boats to approach whales in a dangerously fast and aggressive manner. We recommend a review process to determine if this inappropriate behavior exists and if so, for it to be rectified.

A number of Massachusetts residents are not aware of Stellwagen Bank National Marine Sanctuary or the important role it plays in the coastal economy. There is also little understanding of what a Sanctuary does and why it is designated. Public education is vital to the future protection of SBNMS. State of the Sanctuary reports and documents detailing progress made with implemented goals and responsibilities should be made readily available and easily accessible to the general public in a timely manner. It is important for the public to know what progress has been made, and is in the best interest of the SBNMS to advertise its accomplishments, as this will increase understanding and visibility.

APCC supports the continued cooperation with other state and federal agencies for enforcement of Sanctuary regulations as outlined in the State of the Sanctuary Report. This planned increased enforcement effort will hopefully provide the enforcement necessary to ensure compliance within and outside of the Sanctuary boundaries. APCC would also like SBNMS to consider the feasibility of establishing a cooperative relationship with the commercial users of the Sanctuary, who could act as guardians to help enforce regulations.

At one of the scoping meetings for the Management Plan review SBNMS staff indicated that an "ecosystem management approach" is being considered for the SBNMS. We recommend that this approach and the way it may be implemented be defined and described in detail.

Although there are some restrictions on discharging and depositing within and outside of Sanctuary boundaries, APCC maintains there should be no discharging or depositing allowed within the Sanctuary, regardless of whether or not the vessel is in accordance with Section 312 of the Federal Water Pollution Control Act, as amended (FWPCA), 33 U.S.C. 1322. et seq.

APCC is concerned about the "freight highway" through the Sanctuary that is used by commercial ships, ferries, and cruise ships. The amount of traffic and the high speed at which ships travel are dangerous to marine life. Ship strikes are the leading cause of whale mortality. APCC encourages the Sanctuary to evaluate tighter controls on travel through the Sanctuary boundaries.

Although the SBNMS web site is useful, APCC would like to recommend a few suggestions. More frequent updates would be a valuable means of communicating Sanctuary activities and progress to interested parties in the general public. (The latest update done to the Research & Monitoring page was in April of 2001.) Staff contact information and a general access phone number would also be helpful.

Thank you for this opportunity to comment.

Sincerely,

Maggie Geist
Executive Director

International Fund for Animal Welfare

October 18, 2002

NGO

Dr. Craig MacDonald
Sanctuary Superintendent
Stellwagen Bank National Marine Sanctuary
175 Edward Foster Road
Scituate, MA 02066

Dear Dr. MacDonald: -

www.ifaw.org

INTERNATIONAL HEADQUARTERS
411 Main Street
Yarmouth Port, MA 02675-1822
USA
Tel: 508 744 2000
Fax: 508 744 2009

OFFICES IN:
Australia
Belgium
Canada
China
East Africa
France
Germany
Netherlands
Russia
South Africa
United Kingdom

The International Fund for Animal Welfare (IFAW) welcomes the opportunity to participate in the management review of the Gerry E. Studds Stellwagen Bank National Marine Sanctuary (SBNMS) and is pleased to contribute its viewpoints and comments toward ensuring the best conservation and protection for the Stellwagen ecosystem.

The goals and purposes of the National Marine Sanctuary Program are "to facilitate to the extent compatible with the primary objective of resource protection all public and private uses of the resources of these marine areas not prohibited pursuant to other authorities."

IFAW believes that resource protection should be the focus of Sanctuary activities. As the SBNMS manages people and not resources, it should develop and implement policies that restrict human uses that interfere with the primary objective.

Decision Making

Stellwagen Bank is a biodiverse area and management decisions should be based on the ecosystem, not on fisheries, or species-specific issues. Congress designated the Stellwagen Bank National Marine Sanctuary as a National Treasure and it must be treated as a protected area, managed for the conservation of species as well as for the health of the ecosystem as a whole.

Many of the species that inhabit the Sanctuary are seasonal and migratory in nature, reflecting a need for management decisions that should utilize global information. Therefore, it is essential that the Sanctuary not only coordinates with regional and international communities, but also have a strong participation in fisheries management activities that impact the Sanctuary ecosystem.

Decisions regarding the management of Stellwagen Bank must focus on the primary goal of conservation of the habitat. All decisions should include public input through a well-publicized and extensive public hearing process to encourage the participation of a wide range of stakeholders and other interested individuals.

The public comments and decisions should be accessible to the general public in an easily understandable and accessible format and available on the Sanctuary website. All Sanctuary programs should be available for review on an annual basis and should be posted on the Sanctuary website for public comment and input.

Any research management program must include a mechanism for compliance enforcement and monitoring with associated guidelines and regulations.

Education Advisory Council

Education regarding the existence and importance of Stellwagen Bank is critical and mandates the establishment of a dedicated Education Advisory Council. The mandate of the Council would be to explicate the role of the Sanctuary and management needs for making the Sanctuary more visible to multiple audiences. The Education Advisory Council would also encourage partnerships with NGO's, commercial, and academic organizations so as to build powerful constituencies.

Scientific Advisory Committee

A Scientific Advisory Committee should be established to compile existing historical data, perform site characterizations, and oversee projects proposed within the Sanctuary. The research performed by the Scientific Advisory Committee should consider the migratory range of animals living in or traversing through the Sanctuary, and build international partnerships to strengthen management regimes.

Research activities in the Sanctuary should be prioritized to address acoustical impacts on marine mammals; interrelationships between marine mammal species; effects of ship strikes and entanglements on marine mammals; food web analyses; and analyses of effects on biodiversity from such human impacts as habitat degradation, fishing, water quality, introduction of invasive species, ocean dumping, waste water discharge, and zoning.

The Scientific Advisory Committee should be comprised of a wide range of specialists and stakeholders, and avoid selection of the 'usual' candidates. This science and technical support will facilitate objectivity.

Sister Sanctuaries

IFAW believes that the establishment of sister sanctuaries affords comprehensive protection and increased public awareness of migratory animals, such as the humpback whale. We therefore encourage continued discussion with the US State Department and the government of the Dominican Republic on the creation of a sister sanctuary between SBNMS and the Silver Bank Humpback Whale Sanctuary. The creation of sister sanctuaries, covering both the feeding grounds and breeding grounds of the humpback whale, would position the SBNMS at the cutting edge of marine mammal management.

Potential Negative Impacts

Currently there are a number of potential activities that could negatively impact the marine species that utilize the Sanctuary waters. To minimize impacts, IFAW believes that the Sanctuary should:

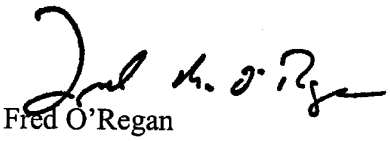
- reduce fixed gear fishing activities in areas where whales are present to minimize the risk of whales becoming entangled in gear;
- encourage and when possible facilitate the development of whale-friendly gear;
- impose vessel speed restrictions within the Sanctuary to protect animals from ship strikes;
- prohibit vessels from dumping waste, pumping bilges, or dumping ballast within the Sanctuary;
- prohibit activities that adversely affect the seabed within the Sanctuary;
- require fishing and recreational vessels to adhere to the same whale watch guidelines and policies as commercial whale watching vessels;
- adopt a policy that prohibits the use of personal watercraft for whale-watching, including, but not limited to, kayaks and jet-skis within the Sanctuary;
- enforce existing and future regulations in the Sanctuary;
- implement a monitoring program to understand the current health of the ecosystem and to identify any changes before a problem becomes critical;

- participate often and proactively in Fisheries management activities and decisions that impact the Sanctuary ecosystem; and

- provide leadership by-example through instituting waste reduction and recycling programs by using recycled goods, alternative energy, and other methods of waste minimization.

IFAW further encourages the Sanctuary to challenge all stakeholders to develop creative solutions to some of these activities, and we look forward to contributing to the next ten years of protection and management of the Sanctuary. We thank you for this opportunity to comment.

Sincerely,



Fred O'Regan
President and CEO
International Fund for Animal Welfare

FO/cc

George N Vellios
1915 Cole Drive
Jefferson City, Missouri
65109

10/18/02

Stellwagen Bank National Marine Sanctuary
175 Edward Foster Road
Scituate MA
02066

Dear Sir or Madam,

This past August my family and I enjoyed a trip "whale watching" on Jeffreys Ledge. We saw several minke whales and a huge fin whale. This was as exciting an experience for me at fifty years of age as it was for my young children. All of my family are concerned about the environment, and we sincerely hope that our descendants will have the opportunity to view whales in their native habitat.

We strongly urge you to:

- **expand the the sanctuary to include all of Jeffreys Ledge**
- **restrict the speed of all boats in the vicinity of whales to 13 knots**
- **keep the sanctuary closed to trawling which may damage the sea floor.**

We all are but the temporary caretakers of the environment, and must ensure that future generations are not deprived of the opportunity to view the rich biodiversity that the sea offers.

Yours faithfully,

George N Vellios

Stellwagen Bank National Marine Sanctuary
175 Edward Foster Road
Scituate, MA 02066
781-545-8026
sbnmsplan@noaa.gov http://stellwagen.nos.noaa.gov

Stellwagen Bank National Marine Sanctuary
Management Plan Review
Scoping Comments

F18

10 YRS AGO we went to City Hall Because You Asked for our help to designate Stellwagen A SANCTUARY You stood there And promised You would never close it to Fishing. I AM A dragger we donot bother the whales wich is Your PRIMARY Concern I Am Gussing Go After the US NAVEY + US MERCHANT Fleet they Kill More whales than All Fishing Boats in the world And Your stats Prove it (over)

Scoping comments may be mailed to the Sanctuary offices at the above address or delivered to Sanctuary staff at one of the Public Meetings scheduled from Sept. 24-Oct. 5 in various locations around New England.

Would you like to be placed on our mailing list for updates on the mananagement plan review?
☑ **YES- hard copy** ☐ **YES-electronic updates**

Name: JASON Polisson FV Rhumboogie
Address: 1029 WASHington ST
City: Gloucester **State:** MASS **Zip:** 01930
Phone: **E-mail:**

Comm Fishing is not A problem
on Middle Bank. Please do not
Give us Another war to fight
USE A little Comon Sence
dont be mean + Kindictive Fishing
desent hurt Anyone we tow
At 2 to 3 Knots

JASON Polisson

FV Rhumboogie

Stellwagen Bank National Marine Sanctuary
175 Edward Foster Road
Scituate, MA 02066
781-545-8026
sbnmsplan@noaa.gov http://stellwagen.nos.noaa.gov

Stellwagen Bank National Marine Sanctuary
Management Plan Review
Scoping Comments

FISH

To Whom it may Concern:

I feel you must keep stellwagen Bank open to Commercial + Recreational Fisheries. The past ten years have seen both areas to the north, south and on the bank it's self have a very productive combined fishery for the rec + comm. sectors to stop one or the other now would be a very large mistake.

Sincerly

Dennis C O'Connell

Scoping comments may be mailed to the Sanctuary offices at the above address or delivered to Sanctuary staff at one of the Public Meetings scheduled from Sept. 24-Oct. 5 in various locations around New England.

Would you like to be placed on our mailing list for updates on the mananagement plan review?
☐ YES- hard copy ☐ YES-electronic updates

Name: Dennis C O'Connell
Address: 44 Jerden's Lane
City: Rockport Ma. **State:** Ma **Zip:** 01966
Phone: 978 546 3742 **E-mail:**

Mark S. Konecky, Ph.D
Licensed Psychologist
Clinical Psychologist
28 Thatcher Road
Rockport, MA 01966

978-546-1364

Stellwagen Bank National Marine Sanctuary
175 Edward Foster Road
Scituate, MA 02066

10/14/02

Dear Sanctuary Staff,

Thank you for your work protecting the Stellwagen Bank Marine Santuary. As you review the Sanctuary Plan, please consider the following suggestions.

1. Expand the Sanctuary Boundaries to include Jeffreys Ledge since the Ledge is an important location for spawning of important food fish species, feeding North Atlantic Right Whales, migrating dolphins, birds and seals, and since the Ledge is so close to the coast, it is vulnerable to the same threats from human usage as Stellwagen Bank.
2. Please place speed restrictions on boats operating in the vicinity of whales and dolphins in the Sanctuary. The speeds of boats have increased in recent years and there have been a number of animal collisions documented in Sanctuary waters over the past few years.
3. Please keep part of the Sanctuary sea floor closed to human use. This closure would protect valuable bottom habitat and would help establish data that could inform us about the impact of trawl fishing on marine life.

Sincerely,

M. Konecky, Ph.D.

Mark S. Konecky, Ph.D.

Fish

Stellwagen Bank National Marine Sanctuary
175 Edward Foster Road
Scituate, MA 02066
781-545-8026
sbnmsplan@noaa.gov http://stellwagen.nos.noaa.gov

Stellwagen Bank National Marine Sanctuary
Management Plan Review
Scoping Comments

COMMERCIAL FISHING ON STELLWAGON BANK SHOULD NEVER BE BANNED. WHEN IT WAS DESIGNATED A SANCTUARY WE WERE TOLD THAT COMMERCIAL FISHING WOULD NOT BE AFFECTED. HISTORICALLY COMMERCIAL FISHING HAS OVER 300 YEARS BEEN ABLE TO FISH THIS VERY PRODUCTIVE AREA AND IT IS STILL VERY PRODUCTIVE TO LARGE AND SMALL COMMUNITIES UP AND DOWN THE NEW ENGLAND COAST.

WE HAVE BEEN ACCUSED BY SOME AS BEING DESTRUCTIVE TO THE HABITAT, SOME EQUATE OUR ACTIVITIES TO "CLEAR CUTTING" THE BOTTOM. IF SO, WHY IS THE BANK STILL PRODUCING A HEALTHY STOCK OF COD AND YELLOW TAIL FLOUNDER AFTER 300 YEARS OF "CLEAR CUTTING". I HAVE FISHED THE BANK FOR 30 OF THOSE 300 YEARS AND HAVE FOUND MOTHER NATURE TO BE MUCH MORE DESTRUCTIV IN AN AREA OF THE NORTHWEST PART OF STELLWAGON WHICH WAS HARD BOTTOM WITH LARGE BOULDERS (SIZE OF CARS) WE USED TO CATCH ALOT OF BLACKBACK FLOUNDERS. BUT, AFTER THE PERFECT STORM OF 1991 THE GRAVEL AND BOULDERS WERE COMPLETELY COVERED OVER BY TONS OF SAND THUS DESTROYING THE HABITAT

WE HAVE ENDURED A PROGRESSION OF RESTRAINTS OVER THE YEA TO PROTECT THE FISH AND THE FISH ARE COMING BACK. NOT ALL AREAS IN THE OCEAN ARE AS PRODUCTIVE AS OTHERS. FORCING FISHERMAN FROM THIS HIGHLY PRODUCTIVE SHOAL INTO DEEPER WATERS WOULD BE THE FINAL BLOW.

THE COMMERCIAL FISHERMAN OF NEW ENGLAND SHOULD NOT BE FRORCED FROM FISHING STELLWAGEN BANK.

Scoping comments may be mailed to the Sanctuary offices at the above address or delivered to Sanctuary staff at one of the Public Meetings scheduled from Sept. 24-Oct. 5 in various locations around New England.

Would you like to be placed on our mailing list for updates on the mananagement plan revlew?
☐ YES- hard copy ☐ YES-electronic updates

Name: PETE LOWE
Address: 7 LEONA LANE
City: OSTERVILLE **State:** MA. **Zip:** 02655
Phone: 508-428-0102 **E-mail:** BELLEDUNE@ATTBI.COM

F/V VOYAGER
Todd M. Jesse
27 Olmstead Terrace
Plymouth, MA 02360
(508) 747-4938

Fish

October 13, 2002
Katrina Van Dine
Stellwagen Bank National Marine Sanctuary
175 Edward Foster Road
Scituate, MA 02066
Dear Katrina Van Dine,

I would like to submit these written comments on the Stellwagen Bank Management Plan review. I attended the meeting in Woods Hole and made comments but would like to put them in writing. I am a full time commercial fisherman who fishes in the sanctuary 12 months a year. I would like to note that both the Boston and Plymouth meetings were held while the Fish Expo was taking place reducing the number of fishermen at the meetings. There are many important issues that must be dealt with. Commercial fishing was promised would not be closed out of the sanctuary when it was first proposed. This area was set up to protect a very important breeding ground for all kinds of marine life. When this area was set up it was to stop ocean dumping, mining, building and other destructive practices. This area was never intended to stop commercial fishing. This area supports many fishermen and their families and must continue. Rolling closures and whale entanglement reduction measures have been put in place and are working. The commercial fishing fleet is also a great scientific research platform. It is very important that the sanctuary protects water quality in this area. Issues such as the out fall pipe, dredging, mining and building should be sanctuary proprieties. It would also be a good idea to increase education at all levels to help reduce interaction with marine mammals. A no discharge zone would also be a good idea. In closing the sanctuary was named from Congressman Studds who was a very strong advocate for commercial fishing and it would be a dishonor to his namesake if it was closed to commercial fishing. Fishery management should be left to NMFS and the NE council. The fish stocks are coming back strong don't ruin this process. I look forward to further meeting to help protect this great and vast area. Thank you.

Sincerely,

Todd M. Jesse

Luis M. Ribas
Captain of F/V Blue Skies
Barrosa Fishing Corp.
Provincetown, MA 02657
(508) 487-4462
Email: lrfish@gis.net

Dr. Craig D. MacDonald
S.B.N.M.S Superintendent
175 Edward Foster Rd.
Scituate,MA. 02066

Dear Dr. Craig MacDonald,

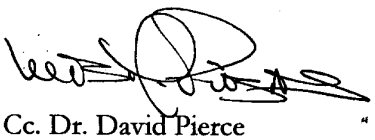
Like was promised, here are the maps with the boundary lines from the Stellwagen Bank National Marine Sanctuary. I hope that your experience aboard my boat served as a method for you to understand the problems, which face the fishermen. Today, our fishing communities as well as others are in danger of losing our livelihoods. The project to turn our fishing grounds into the Stellewagen Sanctuary is proving to our biggest fight to date. We have come across many problems as a fishing community, but never have we feared that our livelihoods would be taken away. The area that is being considered for a sanctuary is in fact, our fishing territory. From those who are working on the project it's said to have the ideal habitat for this type of consideration. But as a fisherman, and someone who knows the area from so many years of fishing on it, I can tell you that this area is not the ideal place for a sanctuary. Really, it's made of sand and mud, but there is however an area that does have the ideal habitat that is wanted. My purpose for this letter is to give you my opinion and advice on a solution that will benefit both parties involved: those that seek a new sanctuary, and the fishermen who desperately need that area.

I think that our proposal of making the Western Gulf of Maine closed area (year round) a sanctuary is a better solution. This area is better area for the type of habitat that you are looking for. The area consists of shallow and deep water, and also consists of hard-bottom sea floors (rocks). This is where the fish protect themselves from predators and it's where the fish go repopulate. If you look closely at the maps over 70 % of the time we fish is inside of the sanctuary boundaries and if you see our proposal of WGOM the area is about 2000 square nautical miles. The boundary lines of the sanctuary are 638 square nautical miles. Basically, the area is ideal spot for the sanctuary. The considered area does not consist of these things. In fact, it's really mud and sand. Again, I am showing you and trying to explain to you all these things because I am not thinking of me alone, but rather a whole fishing community. I consider myself a conservator because I looked to the future and I think that only by communication can we, as man, understand each other. What I think is most difficult today is resolving the problems and yet making everyone happy. Yet, I feel that if both sides come together to try and solve this, both may leave happy and with understanding of one another. I will always be at your disposal for anything that is necessary

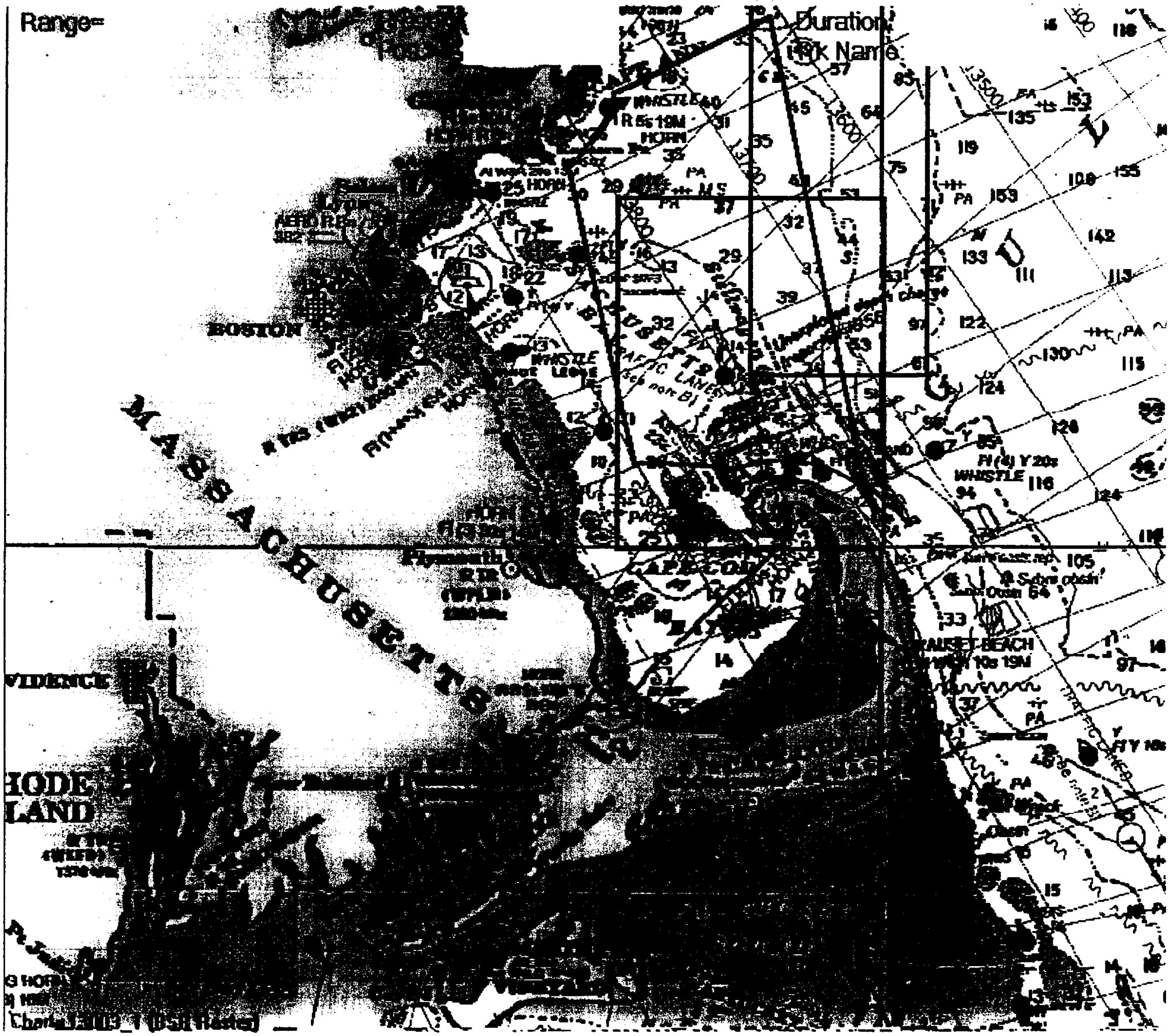
for the good of the future. Thank you once again for taking out of your time to read this letter and I hope that you take my advice into consideration.

Sincerely,

Luis M. Ribas



Cc. Dr. David Pierce



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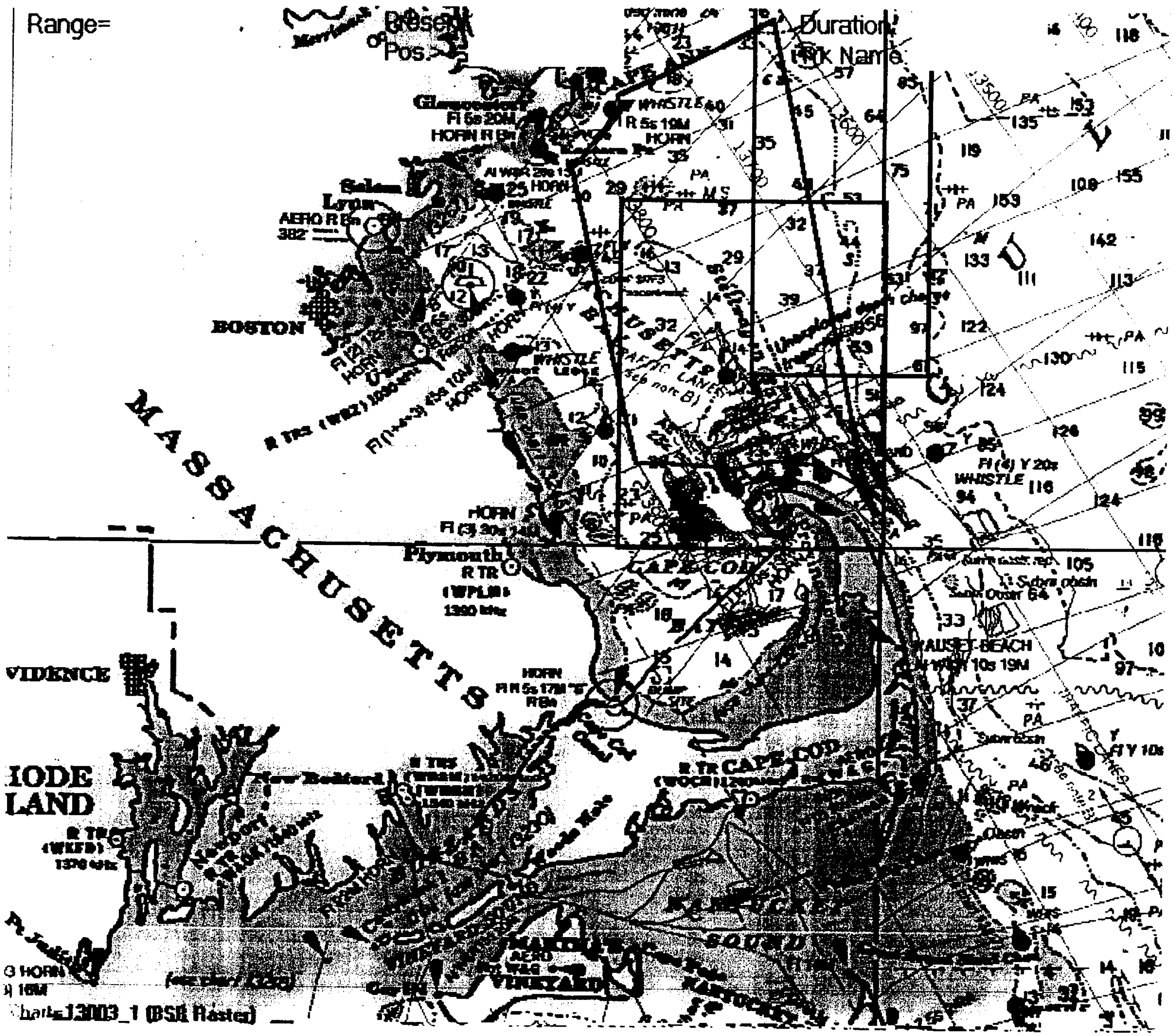
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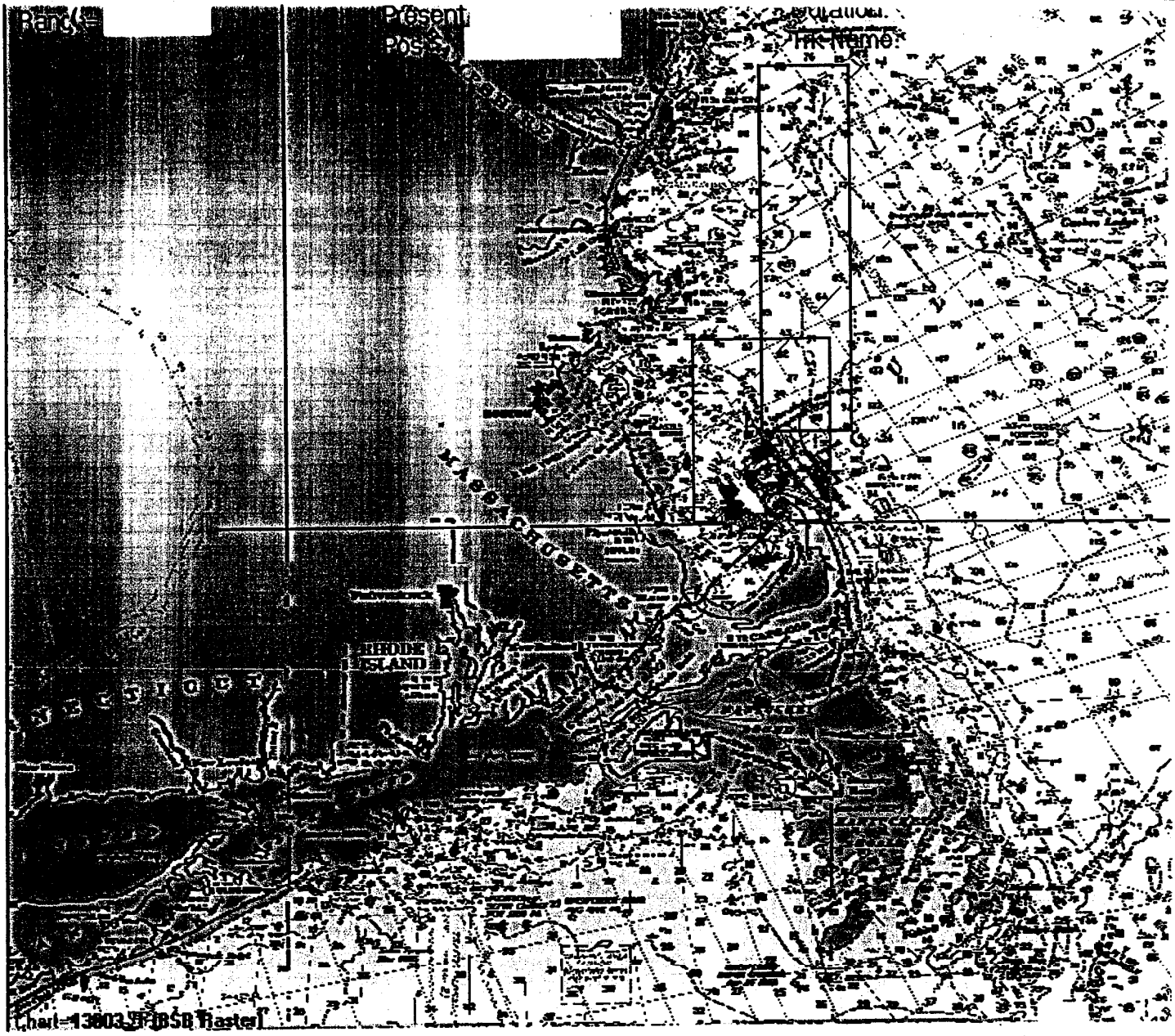
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ISLAND
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Light Red = SBNMS Boundary
Green = Block [illegible] (Seasonal Rolling Closed)
Dark Red = WGOM Closed Area (year round)
Blue Line = [illegible] Grounds
Yellow = [illegible] Grounds

n=16

16

Stellwagen Bank National Marine Sanctuary
MPR Coordinator
175 Edward Foster Road
Scituate, MA 02066

Dianna Schulte
PO Box 44
New Castle NH 03854

September 2002

Dear MPR Coordinator:

I am writing to ask that the Stellwagen Bank National Marine Sanctuary extend its boundaries to include the full length of Jeffreys Ledge as it revises its management plan in the coming months.

Currently only the southern 1/3 of Jeffreys Ledge is included in the sanctuary boundary. It makes little sense to afford Sanctuary status to only this portion of what is, in its entirety, a critical marine habitat. Arguments to extend this protection to the remainder of the Ledge include:

- It is the most important spawning habitat for Gulf of Maine herring, which are a primary prey item for many marine predators including marine mammals, predatory fish, and commercially important ground fish;

- It is an important fall feeding habitat for northern right whales, one of the most critically endangered whales in the world;

- It acts as a "buffer" ecosystem to Stellwagen Bank in years when prey productivity is low in other portions of the Sanctuary;

- It is vulnerable to the effects of highly developed coastal cities, which in this case includes Portsmouth, N.H., and Portland, ME.

Including Jeffreys Ledge in the Stellwagen Bank Sanctuary would be a major stride towards protecting the marine resources of New England, and I encourage you to take this vital step.

Sincerely,

Dianna Schulte

Please **do** / ~~**do not**~~ (circle one) send me further information about the Stellwagen Bank Management Plan Review as the process continues.

Stellwagen Bank National Marine Sanctuary
MPR Coordinator
175 Edward Foster Road
Scituate, MA 02066

Jennifer Hafner
24B Bradstreet Ln
Eliot ME 03903

September 2002

Dear MPR Coordinator:

I am writing to ask that the Stellwagen Bank National Marine Sanctuary extend its boundaries to include the full length of Jeffreys Ledge as it revises its management plan in the coming months.

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Sincerely,

Jennifer L Hafner

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Stellwagen Bank National Marine Sanctuary
MPR Coordinator
175 Edward Foster Road
Scituate, MA 02066

DEBORAH SCHULTE
Box 122
New Castle NH 03854

September 2002

Dear MPR Coordinator:

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Sincerely,

Deborah Schulte

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Stellwagen Bank National Marine Sanctuary
MPR Coordinator
175 Edward Foster Road
Scituate, MA 02066

Deborah Lagman-Marien
9 Collins Street
Newburyport MA 01950

September 2002

Dear MPR Coordinator:

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Sincerely,

Deborah Lagman-Marien

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Stellwagen Bank National Marine Sanctuary
MPR Coordinator
175 Edward Foster Road
Scituate, MA 02066

F A Schultz
PO Box 122
New Castle NH
03854

September 2002

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Sincerely,

F A Schultz

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Stellwagen Bank National Marine Sanctuary
MPR Coordinator
175 Edward Foster Road
Scituate, MA 02066

JOAN DOWARD
395 EDWARD J ROY DR. APT 103
MANCHESTER, NH 03104

September 2002

Dear MPR Coordinator:

I am writing to ask that the Stellwagen Bank National Marine Sanctuary extend its boundaries to include the full length of Jeffreys Ledge as it revises its management plan in the coming months.

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Sincerely,

Joan Doward

Please **do** / (**do not**) (circle one) send me further information about the Stellwagen Bank Management Plan Review as the process continues.

Stellwagen Bank National Marine Sanctuary
MPR Coordinator
175 Edward Foster Road
Scituate, MA 02066

Sandra LaBelle
590 Laydon St
Manchester NH 03109

September 2002

Dear MPR Coordinator:

I am writing to ask that the Stellwagen Bank National Marine Sanctuary extend its boundaries to include the full length of Jeffreys Ledge as it revises its management plan in the coming months.

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Sincerely,

Sandra LaBelle

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Stellwagen Bank National Marine Sanctuary
MPR Coordinator
175 Edward Foster Road
Scituate, MA 02066

Julie Whelan
45 Mulberry Ln.
Chester NH 03036

September 2002

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Sincerely,

Julie L. Whelan

Please **do** / **do not** (circle one) send me further information about the Stellwagen Bank Management Plan Review as the process continues.

Stellwagen Bank National Marine Sanctuary
MPR Coordinator
175 Edward Foster Road
Scituate, MA 02066

92 Megan Dr
Manchester NH 03109

September 2002

Dear MPR Coordinator:

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Sincerely,

Katherine J St Pierre

Please **do** (**do not** (circle one) send me further information about the Stellwagen Bank Management Plan Review as the process continues.

Stellwagen Bank National Marine Sanctuary
MPR Coordinator
175 Edward Foster Road
Scituate, MA 02066

Ryan Langley
6 Deer Run Rd
North Hampton, NH 03862

September 2002

Dear MPR Coordinator:

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Sincerely,

Ryan Langley

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Stellwagen Bank National Marine Sanctuary
MPR Coordinator
175 Edward Foster Road
Scituate, MA 02066

Jamie Nancarrow
997 1st NH Tpke
Northwood, NH 03261

September 2002

Dear MPR Coordinator:

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Sincerely,

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Stellwagen Bank National Marine Sanctuary
MPR Coordinator
175 Edward Foster Road
Scituate, MA 02066

LEO AXTIN
144 WEST RD
RYE NH 03870

September 2002

Dear MPR Coordinator:

I am writing to ask that the Stellwagen Bank National Marine Sanctuary extend its boundaries to include the full length of Jeffreys Ledge as it revises its management plan in the coming months.

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Sincerely,

Leo Axtin

Please (**do**) / **do not** (circle one) send me further information about the Stellwagen Bank Management Plan Review as the process continues.

Stellwagen Bank National Marine Sanctuary
MPR Coordinator
175 Edward Foster Road
Scituate, MA 02066

Peter Reynolds
PO Box 768
Rye NH 03870

September 2002

Dear MPR Coordinator:

I am writing to ask that the Stellwagen Bank National Marine Sanctuary extend its boundaries to include the full length of Jeffreys Ledge as it revises its management plan in the coming months.

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Sincerely,

Peter Reynolds

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Stellwagen Bank National Marine Sanctuary
MPR Coordinator
175 Edward Foster Road
Scituate, MA 02066

Beth Boucher
489 Bremer St.
Manchester, NH -03102-

September 2002

Dear MPR Coordinator:

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Including Jeffreys Ledge in the Stellwagen Bank Sanctuary would be a major stride towards protecting the marine resources of New England, and I encourage you to take this vital step.

Sincerely,

Beth S. Boucher

Please (do) / **do not** (circle one) send me further information about the Stellwagen Bank Management Plan Review as the process continues.

Stellwagen Bank National Marine Sanctuary
MPR Coordinator
175 Edward Foster Road
Scituate, MA 02066

Jacqueline Boucher
788 Bennet St
Manchester NH 03102

September 2002

Dear MPR Coordinator:

I am writing to ask that the Stellwagen Bank National Marine Sanctuary extend its boundaries to include the full length of Jeffreys Ledge as it revises its management plan in the coming months.

Currently only the southern 1/3 of Jeffreys Ledge is included in the sanctuary boundary. It makes little sense to afford Sanctuary status to only this portion of what is, in its entirety, a critical marine habitat. Arguments to extend this protection to the remainder of the Ledge include:

- It is the most important spawning habitat for Gulf of Maine herring, which are a primary prey item for many marine predators including marine mammals, predatory fish, and commercially important ground fish;

- It is an important fall feeding habitat for northern right whales, one of the most critically endangered whales in the world;

- It acts as a "buffer" ecosystem to Stellwagen Bank in years when prey productivity is low in other portions of the Sanctuary;

- It is vulnerable to the effects of highly developed coastal cities, which in this case includes Portsmouth, N.H., and Portland, ME.

Including Jeffreys Ledge in the Stellwagen Bank Sanctuary would be a major stride towards protecting the marine resources of New England, and I encourage you to take this vital step.

Sincerely,

Jacqueline Boucher

Please **do** / **do not** (circle one) send me further information about the Stellwagen Bank Management Plan Review as the process continues.

Scoping comment
COM

NEW BEDFORD OCEANARIUM

Craig MacDonald, Ph.D.
Superintendent
Stellwagen Bank National Marine Sanctuary
U.S. Department of Commerce
NOAA
175 Edward Foster Road
Scituate, MA 02055

NOS

October 4, 2002

Dear Dr. MacDonald:

We appreciate the opportunity we had at the New Bedford hearing to be part of the exchange regarding the future of the Gerry E. Studds Stellwagen Bank National Marine sanctuary. We wanted to follow up with you regarding a collaboration to re-produce and distribute the Voyage of the Mimi series.

The New Bedford Oceanarium, Massachusetts Marine Educators and University of Massachusetts Dartmouth work collaboratively to create education programs and development opportunities for teachers. The Oceanarium is partnered with the University of Massachusetts Dartmouth – School for Marine Science and Technology and Center for Teaching and Learning. Together we work to improve math and science education, and as partners we raise funding from private, state and federal sources.

At the hearing we suggested that the Stellwagen Bank National Marine Sanctuary has a tremendous opportunity at this time in recreating the "*Voyage of the Mimi*" television series. In the original *Voyage of the Mimi* viewers saw a dramatization of an environmental or science problem in the first half of each episode and the remainder was spent at a science / research site. It covered 12 topics, each episode lasting 20 – 25 minutes (classroom length). The *Mimi* sailed out of Gloucester into the Gulf of Maine, transecting Stellwagen on every trip. The vessel is still in Massachusetts Bay and available and "Captain Granville" is interested in picking up the story once again. The original non-profit producer has secured significant funding for math and science education. Together, we would approach them for the funding for the project. They know this series is a proven educational success.

The Voyage of the Mimi project is a match to education, outreach, resource protection goals and responsibilities of the Sanctuary:

- It will enhance public awareness and appreciation of the Sanctuary resources and show the need for their protection

- It creates a product with widespread appeal, which can be marketed to public television, the Discovery Channel, the Nature Channel and others
- It is an outreach opportunity with schools and the University of Massachusetts system
- It will develop curriculum materials and other teacher aids
- It is accessible to the general public through broadcast
- It can be offered as CDs to libraries, environmental groups and other public service organizations
- It will have wide appeal and distribution
- It is a "traveling exhibit"

Outlined on page 6 of the Management Plan Review Update: 1998-200, Stellwagen Bank Issue 4: Lack of Public Awareness:

Concern A: Low Name Recognition

Develop and Implement Outreach Plan for Various Media

The *Voyage of the Mimi* series is the most compelling media. It will air on television and be available as a DVD and videotape. And anything that is "shot" for video can also be done live. Also, the return of this popular series would be widely publicized by general media (newspapers, radio, TV) and specialized media including trade and special interest magazines.

Develop Outreach Program for Virtual Sanctuary Visitation (e.g. Website)

The Voyage of the Mimi would be a major component on the web site. The *Mimi* would feed back images to the web site from cameras strategically placed around the vessel (e.g. bow camera). On board NOS scientists and student participants can step in front of the cameras at planned times to share stories and pieces of actual production shoots can also be fed to the web site. There is the potential for two-way broadcast via satellite for public and media dialogue. This method is used by the Ocean Alliance broadcasting internationally to its web site from *The Odyssey*, and is done as well by the Jason Project.

Develop Corporate/Celebrity Sponsorships and Other Partnerships

The voyage of the Mimi featured a young actor, Ben Affleck. Now a famous star, he is one of many potential celebrities that would be drawn to a high profile project such as this. Corporate sponsorship and public as well as private foundation support is much more easily obtained for any product that is widely distributed, particularly broadcast. The benefits of partnership are evident just in this letter alone. The opportunities coming out of this project would add pages to this letter and we would like to discuss them with you.

Concern B: Better Information Dissemination to the Public and User Groups

Develop Network of Sanctuary Information Centers

The Mimi would serve as the Sanctuary's floating Information Center. It could enter ports all along the coast and conduct workshops, open house, field trips, etc. Port communities would recognize the value of the Mimi and opportunities to place Sanctuary Information Centers within existing community resources (e.g. Visitor

Information Center on New Bedford Harbor) would proliferate, and at little or no cost to the Sanctuary. Schools participating in the Mimi program could serve as Information Centers, as could libraries in their communities.

Establish Sanctuary s Regional Marine Education Resource Center

The Voyage of the Mimi is well recognized as an excellent teaching tool. Each episode could focus on an issue identified by the Sanctuary, and include hands-on learning activities for students. We are offering a proven partnership to create exciting science and math programming indexed to state standards, to conduct teacher workshops and outreach to schools. This is all work the Oceanarium, Mass Marine Educators and UMass Dartmouth are already doing together.

Concern C: Program Support

Establish Graduate Intern Program to Facilitate Joint education / Research with Area Universities.

We are an established partnership that includes the graduate School for Marine Science and Technology, UMass Dartmouth. The School is also the main campus for the Intercampus Graduate School for Marine Sciences and Technology, University of Massachusetts.

We propose that by working together we could take the *Mimi* on another voyage through the Sanctuary and Georges Bank area. We believe the funding is there and we are offering our team to work with the Sanctuary to raise the money, produce the series and create educational materials and exhibits as well as develop alliances to disseminate Sanctuary and Mimi outreach materials. We believe there is a tremendous opportunity here and hope to get together soon to discuss this with you and your colleagues.

Sincerely,

Cheryl Belknap
Director, Education & Research
New Bedford Oceanarium

Jack Crowley
President
Massachusetts Marine Educators

TERRA NOVA
CONSULTING

Ac/Res

BY FACSIMILE

October 18, 2002

Ms. Katrina Van Dine, Management Plan Review Coordinator
Stellwagen Bank National Marine Sanctuary
175 Edward Foster Road
Scituate, MA 02066

RE: Management Plan Review Scoping Comments

Dear Kate:

I welcome this opportunity to provide comment on the issues facing the revision of the Sanctuary's management plan. As you know, marine protected areas have been a focus of my work for the past five years. As the author of two reports on marine protected areas in the Gulf of Maine and an advocate for greater community involvement in the management of marine areas, I am pleased to see that the review process for Stellwagen's plan has finally gotten off the ground.

At this point in the review process I want to offer relatively general observations about the role of the Sanctuary in the Gulf of Maine. These comments are enumerated below.

1) For the past few years it seems that everyone but the agency itself has tried to bring definition to the operational purpose of this site. The mission statement, although reflected in Sanctuary activities is not realized by them.

   It is of paramount importance to the effectual functioning of the Sanctuary that it clearly communicate, through its actions as well as its words, its primary and most compelling reason for existing. The public needs to know, from the deeds and practices of the site's managers and trustees, why is a National Marine Sanctuary present on Stellwagen Bank. What role is it unequivocally fulfilling? What fundamental contribution is it making? This raison d'etre needs to be realized unambiguously and repeatedly so that it provides the ultimate frame of reference for evaluating the Sanctuary's processes and products from one year to the next.

28 Martin Point Rd. • Friendship, Maine • 04547
ph: 207/832-6162 • fx: 207/832-6160 • e-mail: jatkinson@acadia.net

As the management plan review process moves forward I believe that this is one of the more important scoping issues that needs to be resolved. If there is not a shared understanding of why the Sanctuary exists, of what role it serves, then the search for common ground among stakeholders about what it should be doing becomes that much more fractious.

2) The role of the Sanctuary must be relevant to the context in which it functions. The Gulf of Maine is not an undisturbed wilderness. It is, however, a biologically productive area which has met generations of human needs. Stellwagen represents a critical site in the life of many of the Gulf's resources. Yet, like the rest of the region, it has been profoundly altered by human use. If the Sanctuary is to serve as the flagship MPA in this region it must lead efforts to understand the impacts of this use and the methods available to manage it most appropriately. To do this it must operate not only as a site of research in the natural and social sciences but also as a locus of management experimentation and learning.

   To date the Sanctuary has provided opportunities for marine scientists to increase the body of knowledge about aspects of the Gulf of Maine's ecosystem and impacts of human use. The site may soon also provide clues into our maritime past. What the Sanctuary has rarely done, however, is introduce, test, evaluate, and adapt to this region new methods available to improve the way we manage our use of the broader ecosystem.

   As a specifically designated marine site, Stellwagen Bank NMS should also be a locus of learning and experimentation into the efficacy of new management tools and approaches in the Gulf of Maine such as those designed to:

   - rationalize multiple use, such as zoning;
   - protect biological diversity, such as marine reserves;
   - reduce the unintended mortality of fish and wildlife, such as gear modifications; and
   - reduce the adverse impacts of nature-based tourism and maritime transport on wildlife.

This question of role is just one of the many issues facing the Sanctuary in the revision of its management plan. Although I have chosen to highlight this threshold issue, I remain deeply concerned about the Sanctuary's practical commitment to resource protection within its boundaries to date. Consistent with improving 1) our understanding of the Gulf of Maine ecosystem and human use impacts and 2) our ability to manage these uses, is a need to ensure that the very resources that define the ecological character and significance of this area are sustained from one generation to the next.

28 Martin Point Rd. • Friendship, Maine • 04547
ph: 207/832-6162 • fx: 207/832-6160 • e-mail: jatkinson@acadia.net

J. Atkinson comments/ cont. page 3 of 3.....

Thank you for the opportunity to provide these comments in this first stage of your management review process. I look forward to continued opportunity to express my views on the role and direction of management within the Stellwagen National Marine Sanctuary.

Sincerely yours,

Jennifer Atkinson

28 Martin Point Rd. • Friendship, Maine • 04547
ph: 207/832-6162 • fx: 207/832-6160 • e-mail: jatkinson@acadia.net

Stellwagen Bank National Marine Sanctuary
MPR Coordinator
175 Edward Foster Road
Scituate, MA 02066

KVD
rec'd
10/11/02

Indiv

Mr. Laurent E. Autotte
55 River Rd. # 70
Manchester, NH 03104

September 2002

Dear MPR Coordinator:

I am writing to ask that the Stellwagen Bank National Marine Sanctuary extend its boundaries to include the full length of Jeffreys Ledge as it revises its management plan in the coming months.

Currently only the southern 1/3 of Jeffreys Ledge is included in the sanctuary boundary. It makes little sense to afford Sanctuary status to only this portion of what is, in its entirety, a critical marine habitat. Arguments to extend this protection to the remainder of the Ledge include:

- It is the most important spawning habitat for Gulf of Maine herring, which are a primary prey item for many marine predators including marine mammals, predatory fish, and commercially important ground fish;

- It is an important fall feeding habitat for northern right whales, one of the most critically endangered whales in the world;

- It acts as a "buffer" ecosystem to Stellwagen Bank in years when prey productivity is low in other portions of the Sanctuary;

- It is vulnerable to the effects of highly developed coastal cities, which in this case includes Portsmouth, N.H., and Portland, ME.

Including Jeffreys Ledge in the Stellwagen Bank Sanctuary would be a major stride towards protecting the marine resources of New England, and I encourage you to take this vital step.

Sincerely,

Laurent E. Autotte

Please **do** / **do not** (circle one) send me further information about the Stellwagen Bank Management Plan Review as the process continues.

September 24, 2002

Stellwagen Bank National Marine Sanctuary
175 Edward Foster Road
Scituate, MA 02066

To the Committee:

I live in Wisconsin, but have braved the heavy traffic at least five times to go whale watching with Captain Bill. I most care about two things in this life:-the preservation of the environment and the preservation of animals. Humans are the enemy with their "I want, I need, you must give me, I have my rights" sort of thing. My parents once owned a little summer cottage on a little lake many years ago, but the population grew and grew and encroached on it, everyone had a speed boat, everyone cut down trees, trampled the vegetation, built large houses, chased out the birds, created dust, and made a wasteland out of a once beautiful area. So goes the whole world.

People must not be allowed to have their own selfish way on everything or to have their every whim satisified. They must be kept in check, or they will destroy every last thing on earth. The whales need to be protected, the ocean must remain a living entity, an ecosystem full of life and vitality. Stand up to the speed boaters and the fishermen who won't admit that the oceans are becoming virtually fished out & those who insist that everything was put here for their taking. We all know what humans are like. They would eagerly line up for the distinction of being the one to kill the last animal on earth. We need badly to hold the line against our own kind.

The key words should be "conserve" and "preserve" and "expand" in any decisions made regarding the Stellwagen Bank and the Jeffreys Ledge. There is so little left in the world of anything to conserve that we can't afford to lose anything more.

Thank you for your time and attention, and please remember that I speak for many, including future generations.

Sincerely,

Esther Mattson

Esther Mattson
11328 North Riverland Rd.
Mequon, WI 53092-2714

9 Clinton Lane
Highland Falls, NY 10928
22 September, 2002

Stellwagon Bank National Marine Sanctuary
175 Edward Foster Road
Scituate, MA 02066

Dear Sirs;

After being on a most successful whale watch and thoroughly enjoying seeing these wonderful animals we are in favor of anything that will protect them and encourage their future safety.

We are strongly in favor of extending the Stellwagon Sanctuary borders to include all of Jeffrey's Ledge.

We're sure you also wish to insure the safety of the whales and will consider this matter favorably.

Sincerely,

Doris Koziak

Doris Koziak

Erwin Koziak

Erwin Koziak

52 Derby St.
Waltham, MA. 02453

Rec'd 7/16/02 DVD

July 11, 02

Dear Ms. Van Dine,

Thanks for your return call & your interesting information. I am very concerned about the water quality on Stellwagen as a result of the Deer Island sewage pipe. You also pointed out that the balance between salt water/ fresh water is also of concern. I am interested in attending public fora as time permits.

Elsa Lichman

MS. ELSA LICHMAN

WILLIAM L. BLANTON
9101 VOETMANN RD • FALL CREEK WI • 54742

The American Creativity Academy for B
P.O. Box 1740
HAWALLI 32018
KUWAIT

August 29, 2002

RECEIVED 9/9/02

Dear Mrs Studds,

I was in Massachusetts in July and visited the Stellwagen Bank on Captain Johns Whale Watch Boat. The sea naturalist provided our group of teachers with literature from which I gleaned your name and address.

During the trip she explained that the region is open to re-evaluation of its use. It is this I'm most interested in writing to you. I would ask that you pass this on to proper channels.

Most simply, I feel that the restrictions in place are not severe enough to protect this global treasure. Drag nets, and gill nets should not be allowed at all. I agree totally with the dumping ban and sea floor preservation.

One of the most blatant abuses of the banks I witnessed was in whale watching. Captain Johns fleet and other similar vessels are keenly attuned to the dangers they present to marine life in this area. They cut motors at whale displays and travel only at low speeds. Additionally, each boat can handle a couple hundred viewers.

In my July visit, I witnessed a cabin cruiser with a pilot and a mere three passengers harass the whales we saw by speeding from spray to spray. I feel private vessels must obey the exact, if not more restricted, regulations of the commercial boats. Furthermore, I believe a law should be passed that commercial boats be required to report registration numbers to the Coast Guard of violators - perhaps even video tape as evidence their ruthless use of the area.

Obviously, I feel this area must be protected from destruction by man. I trust you and your colleagues feel the same. I was very impressed and reassured by current management/educational practices and strongly wish them to continue unabated with perhaps the strengthening I mentioned earlier.

Trusting in your stewardship,

William L. Blanton
Fall Creek, WI 54742

Currently teaching in
Hawalli, Kuwait

1nd

6 July, 2002
31 Old Stage Rd.
Centerville, Ma. 026
(617) 543-3862

Dear Dr. MacDonald,

This letter is to offer comment re.: SBNMS management.

My comment is to recommend creation of a BIG, pro-active P.R. commitment, i.e., a vehicle (recognizing structure within management strategy) dedicated to funding and incorporating the most effective tool of communication to enhance public response and involvement.

To that vehicle, my contribution is that, the most effective

communication that enhances, nurtures and best speaks to my love of Marine life and all of Nature are:

① The video series "OCEAN WILDS" THE JOURNEYS OF FEODOR PITCAIRN directed & created by Feodor Pitcairn; (available via PBS)

② The words as presented in the book, "THE EARTH'S WILD PLACES - VOL. 4" THE PRIMAL ALLIANCE EARTH & OCEAN (a Friends of the Earth series published with McCall Publ.) of John Hay;

③ The books of naturalist John Hay;

④ The photos as presented in the

covers of your

"MANAGEMENT REVIEW UPDATE: 1998-2002"

and "STATE OF THE SANCTUARY REPORT";

(5) Last but not least -

Direct experiences of and with nature in its undisturbed state.

Thank you for your commitment to good communication and for this opportunity to contribute comments.

Sincerely,

Karen Roberson

✓ also at Saying Ptown Recd 10/11/02 KVD

For the record my fishing activity and all other commercial fishing activity should not be stopped or restricted any further by the sanctury authority.

Several years ago at the fish expo in Boston Brad Barr representitive for the Sanctuary told me personally, the creation of this sanctuary would never affect my ability to earn a living there. Their concern was to protect the bank from mineral and gas exploratio

Now the Sanctuary Authority is here seeking direction from the public as what to do. There are some that would like to stop all human activity out there, except for their pet projects.

Whats broken that need fixing? I wonder presently there are more Scallops, cod, haddock, Flounder than I've seen in more than 30 years fishing there. whats the problem? These species and others have made a great recovery in short time. They are rebuilding to their historic levels. We fishermen have made the sacrafices to accomplish this recovery. Limited to 88 days at sea, Rolling closures up to 6 months in length, Larger mesh sizes. The list of restrictions goes on and on. These restrictions are from the New England fisheries Management council and the National marine fisheries service.

We dont need Marine Protected areas restricting us even further or creating no fishing zones. We already have hundreds of square miles that we are shut out of.

Stellwagen bank is very special, I know this from 20 years Commercial fishing there year after year. My familys fishing heritage goes back several generations. This is were we harvest the renewable resource that helps feed this Country I have a hard time thinking of this as a National Park for the general public, example Yellowstone, the Redwood forest, etc. So far thru my experience over the years I have seldom seen a family outing or a recreational fisherman utilize this sanctuary. The public generally pays 60 to 80 dollars for a family of four to stand in line on a whale watch boat to get a peek at a few whales, Is the intent to create a whale park? no other access

Recently at another meeting we were told the boundary lines are flexible, meaning it can grow, shrink or move any direction to better accomplish its goals.

I feel if the enviromental groups and all concerned parties including myself want to get the biggest bang for the buck, we should turn our attention to the coastline, wetlands, example P-town harbor, Hatches harbor, and Parret river.

All incredible classrooms where my children and the public can easily access it, free of charge and really experience the beauty of our marine environment. I think Commercial fishing as it presently exists should continue to exist on the banks It creates jobs and opportunities for our community and feeds thousands of people daily with a local fresh product.

Phillip Michaud Jr
Truro MASS

also at Spring Glove.

STEPHAN GERSH

Voice 978.768.7822 Facsimile 978.768.3649 Email sgersh@cove.com

September 30, 2002

Dr. Craig D. MacDonald
Superintendent
Gerry E. Studds
Stellwagen Bank National Marine Sanctuary
175 Edward Foster Road
Scituate, MA 02066

Dear Dr. MacDonald:

Thank you for this opportunity to submit my comments regarding the Stellwagen Management Plan Review. Having lived for the last 37 years in Essex, MA I have taken every opportunity to experience the diversity of marine life in the waters of the Sanctuary, before and after it's designation in 1992.

In particular my passion are the great whales, all of whom are currently classified as endangered species. I have been out on whale watching boats for as long as there has been whale watching out of Gloucester. To see them, hear them and smell their blow is to be exposed to magnificent creatures who evoke awe, humility and compassion. There is a presence in them that manifests the elemental force of life in all it's magic, strength and beauty. They bring us into a direct confrontation with wildness, so much needed in the antiseptic world we humans have created in the world for ourselves. Their environmental is one of the few not conditioned by human design. Whales bring me home and remind me that I and they together share in the great interdependency of life on this earth.

A sanctuary is a place of last resort where safety and protection at the highest level should be afforded to individual species as well as the ecosystem as a whole. Some human activities endanger whales and marine life and disrupt and destroy the ecosystems all marine life depends on for their existence. If we humans were not around if is obvious there would be no need to designate a sanctuary. The entire world, it's oceans and all it's species would live in a harmony resulting from evolutionary systems. We are the ones who disrupt these systems and as such we are the ones who are absolutely morally responsible to assure the least impact from our activities and assure that system the highest level of protection possible.

To see whales and other marine life in the Sanctuary, people travel by boats to and in the Sanctuary. They do so on commercial whale watching boats

One Conomo Point Road P.O. Box 949 Essex, Massachusetts 01929

as well as privately owned boats. Over the years the number of boats and the speed at which boats travel have increased tremendously. When I first ventured into the Sanctuary years ago I rarely saw a boat traveling more than 15 knots. Now I see high speed boats traveling at 40 knots. How on earth please tell me can you expect a boat at 40 knots to maintain enough control to avoid hitting a whale that surfaces without warning. Collisions between private boats and whale watching boat and whales and other marine mammals have increased over the years. Is this an indication that we have created a true sanctuary for marine mammals? I don't think so.

It's fine to issue whale watch guidelines, as NMFS did in 1999, but they 'suggest slowing down within two miles of whales to no more than 13 knots". Having been out on many many whale watching trips I have never seen this followed except by a very few whale watching boat captains In speaking with owners of private boars who use the Sanctuary I have never heard anything that indicates that they even know what the "suggested guidelines" require or even what they are. It is essential to change all whale watching guidelines to mandatory and enforceable regulation and extend the jurisdiction to all boats of any kind that are within the Sanctuary. It's the old argument about whether you allow the fox to hold the keys to the hen house and self-regulate their own activities.

No new research regarding this issue is needed. Use the data you currently have regarding specific areas where particular marine species are at risk and promulgate mandatory guidelines immediately. If humans, for example, were at risk from a contaminated food source that endangered our lives would we suggest that we conduct ongoing research to assess every detail of the potential impact and allow during the process additional people to be affected. I don't think so. We would respond overnight if we were the ones who were endangered. Why are marine mammals who are endangered by our behavior any different in their need for immediate protection as we would be if it we who were endangered.

Without public education and outreach the message will not get out regarding regulations regarding boat speed and approach protocols in the vicinity of whales. Marinas, boating clubs, docks, and town and city departments that issue mooring permits as well as the state registration requirements for boat ownership should all be targeted with education videos, presentations and printed information. I would even suggest that before any boater receives a mooring permit, registration number, or docking space they should be required to demonstrate their understanding of the responsibility they have when taking their boat into the Sanctuary.

Do we let anyone who feels like driving on our highways do so without a test to prove they know the rules of the road.?

Whale watch companies make their living by bringing people to the whales. The more time with the whales especially when the whales are performing display behavior such as lunge feeding or breaching the more excited and satisfied the customers are. Whale watching is about education in part but essentially it is a way to make money. If a captain can get to the whale first and stay on top of it for the longest time the better they serve their customers. I have been out on many whale watch trips and seen the whale watching boats racing, in excess of suggested speeds, to get to a whale, staying on top of it without exchanging times with other whale watch boat as is presently suggested and continue to track the animal at distances currently not recommended. Unfortunately this behavior is not always in the best interest of the whale.

Mandatory whale watching regulations should be applied to commercial whale watching boats as well as the private sector. I would further suggest that a license to operate within the Sanctuary be required of whale watch companies with the demonstrating that know and are willing to abide by the regulations. The license fee could be used to offset some of the costs of education and outreach. Please understands that there are responsible boat captains operating in the Sanctuary but I cannot say that all of the captains are as responsible as the few.

Regulations without enforcement are worthless. The Sanctuary does a poor job of enforcing even the present suggested guidelines. There needs to be a visible presence of patrol boats, especially during the height of the boating season. the The public as well as whale watch boat captains need to realize that the regulations for whale watching and the Sanctuary roles in general are to be taken seriously. Fines should be applied to those individuals who violate the regulations. Without the presents of police on our highways everyone would drive as whatever speed they felt like. Without enforcement all other discussions about protocols are a waste of everyone's time.

The continued entanglement of whales in fishing gear and marine debris continues even with the recent introduction of break away devises on nets and lobster trap lines. Not all entanglements necessarily occur in the Sanctuary, however there is still not enough information about those that do to define a more stringent policy and the techniques to prevent these entanglements. It is essential to develop accurate information dealing with this specific problem with the commitment to reducing entanglements to zero.

Protection of marine life cannot be separated from the habitat those species live in. If you don't protect the habitat you can't say that you are serious about the protection of the creatures who depend upon it. When the Sanctuary was originally designated it included the lower third of Jefrey's Ledge. This as you know is a similar area to Stellwagen extending northeast of Cape Ann to Southern Maine. There is of course a difference. The primary prey species on Stellwagen is sand lance and than on Jefrey's is herring. The two species seem to have a relationship. When one species is depressed in population numbers the other many times is abundant. Maine mammals feed on both and whales will go where there is food which many times is to Jeffrey's Ledge and not Stellwagen.

I would point out in particular this summer's remarkable occurrence of Blue Whales, not native to our waters, appearing on Jeffrey's Ledge to feed on herring.

Just as it was recognized that the Stellwagen Bank was located next to many highly developed urban population centers, Jeffrey's Ledge also shares this proximity to similar population centers along the coast of New Hampshire and Maine. Jeffrey's Ledge is subject to the same threats from human activities as is Stellwagen Bank. Jeffreye's Ledge however is not afforded the same level of protection as was afforded the original designated area of Stellwagen. In addition it is the most important spawning habitat for herring in the Gulf of Maine and overfishing can upset the balance in the ecosystem. The highly endangered northern right whale in particular depends on this area for feeding, especially in the fall months. The Whale Center of New England, who is represented on the advisory committee of Stellwagen Sanctuary, has supported for many years the extension of the Sanctuary to include the remaining two thirds of Jeffrey's Ledge. I cannot over emphasize the importance of this extension. In the oceans there are no fences that designated the northeast edge of Stellwagen. Stellwagen and Jeffrey's Ledge are contiguous and as such should be be recognized as providing similar resources to the marine mammals who inhabit and utilize them for their existence. Please take seriously the requests of many people to expand Stellwagen Sanctuary to include the whole of Jeffrey's Ledge.

Commercial fishing continues in Stellwagen Sanctuary and Jeffrey's Ledge. The most common type of fishing is trawling where nets are dragged across the sea floor. Many species of ground fish, such as flounder, cod and haddock are caught in this manner. The technique however disturbs the entire sea floor. It affects species diversity including plants and the very physical structure of the sea floor. It's like taking a vacuums cleaning and removing

everything in sight. What should be an obvious consequences of this practice are now being studied by the temporary closing of a region called 'the Western Gulf of Maine' by fishery managers.

The preliminary results indicate that when left alone the sea floor recovers with a large, diverse community of animals and plants. It's not too surprising to me since when we humans stop our assault on nature, nature in most cases is given a change to heal itself. In particular the closing of the Western Gulf of Maine as an important study area should not end. To open this area again to commercial fishing before we understand the total impact of commercial fishing on the health of the sea floor is foolish. Too many species depend on a healthy and naturally balanced ecosystem on the sea floor for their survival. Again without the continuation of this important study and allowing trawling to resume we base our decisions on short term rewards and sacrifice the essential knowledge of the long term consequences of what we do.

In closing I would like to refer to what I stated at the beginning of my comments. A sanctuary is a place of last resort where safety and protection at the highest level is afforded individual species as well as the ecosystem as a whole. I ask that the future Stellwagen Management Plan be based on the moral and scientific mandates required by a true Sanctuary. Thank you for allowing me to submit my comments to you.

Sincerely,

Stephan Gersh

Scoping comments attached,

Subject: E-Mail Sent To Craig
Date: Tue, 1 Oct 2002 12:36:31 -0400
From: Stephan Gersh <sgersh@cove.com>
To: sandi.dentino@noaa.gov

Dear Craig,

It was a pleasure to finally meet you last night in Gloucester. I look forward to working with you and Stellwagen Sanctuary on future projects as the Marine Exhibition Center unfolds at the Whale Center of New England.

I left last night's meeting very upset. I had spent four hours writing my comments letter. I wrote the letter as a private citizen, not as the President of the Whale Center of New England. I have mailed you a copy directly to your office. I explained to the moderator that I had drafted a five page comments letter and asked permission of her and the group at my table if I could simply read it. Everyone said yes. When I got three quarters of the way through she cut in and said because there were so many people wanting to give comments I had to stop before I finished my comments.

No one indicated there was a restricted length to the comments input. I care passionately about the issues being considered in the Management Plan and very carefully crafted my comments to reflect my many years involved with the WCNE as well as marine mammals in the Sanctuary. With the large number of people who showed up there should have been more tables and a greater number of moderators and recorders . Many of my comments were not recorded since I was asked to stop before I finished

I trust you will read my comments letter in full and include the comments on the specific issues I addressed. It did not feel right to me to be cut off regardless of the length of my letter. A lot of work and reflection went into it.

Cordially,

Stephan Gersh
WCNE
sgersh@cove.com

21 Joppa Rd.
Edinburgh
EH15 2HA
U.K.
4/10/02

Stellwagon Bank,
National Marine Sanct.
175 Edward Foster Rd.
Scituate, MA 02066

Dear Sirs

To protect the whales - marine life in your area, I think it is imperative that the protected area be extended as far as possible.

I believe there is an area called Jeffries ledge which could get with Stellwagon when providing feeding grounds for endangered species. I do hope you can help to care for these beautiful creatures

yours faithfully
Joyce Foley

May 24, 200[illegible]

To Whom It May Concern

in support

I am writing to you to support a speed limit within the sanctuary. People need to know we go in to animal space as just as well as they come into ours. When we own a pet we teach them things as well as they teach us stuff. We need to teach us stuff about the wild animals.

We were put here to share Earth with the animals not to take over and destroy everything.

So please work on a speed limit for the sanctuary. It is suppose to be a place for the

whales. I've adopted a humpback whale. I can't bring my humpback to my house and protect him like I do with the rest of my animals but I hope we can work together and protect the whales together.

We need to start making animals a priority we don't realize of we destroy animals that we are doing damage to ourselves as humans. Their was a balance and now there isn't we need to start working on putting the balance back.

yours truly,
Kallie Gabert

P.S.
SUPPORT B
SPEED LIMIT
SO WHALES
CAN LIVE!

13th September 2002

Att: Stellwagen Bank National Marine Sanctuary
Craig D MacDonald, Superintendent
Katrina Van Dine, Management Plan Coordinator
175, Edward Foster Road
Scituate,
MA 02066

Dear Craig & Katrina,

I am writing to you, as unfortunately I will be in England during the time that all of the intended scoping meetings will be held here between the 24th September and 5th October, so I will be unable to attend.

As an avid whale watcher and photographer for over 12 years, I have observed whales in four different oceans from over twenty different locations. I have participated in over 300 whale watch trips and have spent over 20 weeks in the company of whales from a private research boat. I financially support the Keiki Kohola Project run by Rachel Cartwright working with Humpback Mothers and Calves.(www.CaringForCalves.Com).

I would like to present the following for consideration under the review process.

With the formation of the Stellwagen Sanctuary (SNMS) a decision was taken to protect the marine life and the marine ecology within the designated area. By making that decision it also promotes to the world the special nature of the SNMS and it attracts visitors accordingly. Just in the same way that on land the designation of a National Park does. If you then as Managers and Custodians of the SNMS fail to protect the designated area, and the marine life that you have identified as being deserving of the special protection, by either supervision or regulation, then you are committing the greatest sin. You are bringing down upon the SNMS the intrusion of the human population, threatening the pattern of life that the marine life would have enjoyed, if you had not bestowed the protection in the first place.

Just as no one would expect to be allowed to drive their latest 4X4 SUV at speed around a Moose Mother and Calf pair in the heart of Yellowstone National Park, no one should expect to, or be allowed to harass a Humpback Whale Mother and Calf in the same way with a boat.

I have listed the following as a proposal to deal with a number of important issues, I hope you will take the time to consider them.

1) In order to form the basis of protection the SNMS needs to be able to raise funds for a number of reasons, to be able to both provide educational support and enforcement of the guidelines or regulations. To do this anyone wishing to use the Sanctuary area should be required to pay a Permit fee. These could range from US$25 per year for a small day fishing boat (0-30'), through $500.00 per year for commercial vessels and up to US$1,000.00 per year for Whale Watching vessels, whose business is all about being in the SNMS. Vessels transiting the SNMS could pay a fee, which could be set such that it does not harm the commercial competitiveness of Boston or any other harbor, for large commercial vessels this could be US$250.00 per year, and for smaller vessels $100.00. No one expects to pass through such areas without paying. Examples: National Parks, Toll Roads, Tunnel Tolls, Restricted Access Fees (City centers) Areas of special interest (Alpine Tolls).

2) For the fee paid each user would get a handbook containing the guidelines, rules and regulations of the SNMS, they also would get a highly visible orange disc with a number on it. This disc then allows either the US Coastguard or SNMS staff to identify individual vessels and trace back the persons responsible for the vessel.

3) The SNMS should be able to enforce fines for activities, which violate the guidelines, rules and regulations. I have witnessed appalling behavior by whale watch boats, which, whilst surrounded by private boats sends the wrong example to the private boaters. These kind of instances, should be subject to heavy penalties. All vessel operators need to know that if they do not follow guidelines there are consequences. I have seen local fishermen, lobstermen, private boaters drive through groups of whales at full speed completely ignoring their presence. This is not a sanctuary it is simply a free for all. The ultimate fine should be the removal of the permit to visit or operate within the Sanctuary.

4) One of the greatest debates of recent years is "speed". Just as on the road, speed kills, it also causes distress, and yet on the ocean, everyone runs away from the issue because it is too hard to enforce. This is not true, current technology provides a "track while you scan" radar system, that is capable of plotting the course and speed of up to 40 targets within a marked area storing all of the data and downloading this to a computer for record. A vessel, whether it be a Coast Guard vessel, a NMFS vessel or a SNMS vessel equipped with such a device, patrolling the sensitive areas, would put pay to the speeding issue very quickly. If "Mr Smith" average Boston private boater gets a call on his radio and is told he is doing 30 knots on a SSW course and he should not be, and if he does not slow down, he will be fined. The word would soon get around that the speed limits are enforceable. High Speed ferries should not be in sensitive waters.

5) The whale watch guidelines, which are currently being reviewed in the light of being made into regulations, are a major step forward but without enforcement, they will be meaningless.

6) All whale watch boats should have an independent Naturalist/Observer
All Naturalist should be qualified (NMFA or SNMS or NOAA)
There should be no after dark "cruises" if you can not see a whale how do you avoid one?
All night time ferries should be made to go around sensitive areas.

7) This brings us on to the "Use" of the SNMS, everyone understands that we do not want to lay oil pipes or gas pipes in the area, or go prospecting for other such industrial products, just as we would not expect the same thing in a National Park, but what we must focus on, is that in a Sanctuary, the only right of "use" belongs to the natural inhabitants, otherwise again it is not a sanctuary. One of the leading causes of concern presently with all whales, and in particular the Northern Right Whale is the question of entanglement. Lots of money has been spent on this issue, endless hours of discussions, new fishing gear proposals, but the whales are still getting entangled and are still being killed. Just take the nets and gear out of the water in sensitive areas. It is simple, this is either a protected place, or it is not, you cannot have one without the other. It is incredible to most common sense type of folk that there is such a "who-ha" about trying to save and endangered Northern Right Whale from drowning in tangled gear, when at the same time some fisherman is placing a new net in the very spot where the Whales like to feed. It would be akin to a poacher setting a trap for a rabbit, then the State spending money to try and save the rabbit after it has been caught. Recently when all of the media coverage was following the whale Churchill's attempted rescue, a 7 year old girl said to me, "this is like the story of the King with no Clothes just move the nets out of the whales way", what is obvious is in front of you but no one acts on it.

8) The SNMS should actively sponsor research programs to identify and answer many of the still un-answered questions surrounding the SNMS. What are the impacts of the changing fish populations and patterns, the distribution of vessels and types, the water quality, the impacts of new shoreline developments, the impact of sound on the marine life. Some of this is already being done, why for instance have the whales simply not been on Stellwagen this year?

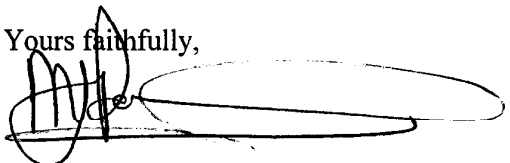
9) The new out reach centers are an excellent step in the education direction and should be expanded to include more exhibits and centers. Exhibitions about the dangers of Pollution, Dumping of Trash at Sea, a campaign to lessen the release of balloons along the coast, and much more can be done to involve the general public in understanding the part they play in keeping the environment as un-spoilt as we can.

From my experience of looking at the protection afforded to the Whales in particular, it appears that most of what we would want is on the "books" already, it is simply not being enforced. Only by in-acting an effective enforcement plan do you then provide the protection that we all want, it is more important than increasing the boundaries of the SNMS, because in some matters, being outside of this heavily trafficked area has it's advantages.

It is the behavior and consideration of people and vessels that create many of the problems for whales, with education these areas can be improved over time. With enforcement, education can be reinforced. I have had the joy of sitting on a small raft, having simply remained in one spot, for 3 or 4 hours and had whales come and check us out, coming to within inches of the side of the boat, similarly again sitting in one spot, I have witnessed a group of 8 Humpback whales use the bottom of the boat as a trap to catch the Herring who had taken refuge under the boat, placing us in the middle of a feeding lunge, entirely at the whales choice, direction and control, In both of these instances no intrusion into the Whales world was caused, because the behavior was appropriate.

I wish you well in your meetings, and thank you for your consideration of the above. I have attached for you a copy of my own, outreach work.

Yours faithfully,



Mark G Percival
16, Seaview Road, Gloucester MA01930-4268
mpercival@prodigy.net

Craig MacDonald, Superintendent
Gerry E. Studds / Stellwagen Bank
National Marine Sanctuary
175 Edward Foster Road
Scituate, MA 02066

Dear Mr. MacDonald,

I support creation of fully protected areas within the Stellwagen Bank National Marine Sanctuary.

I am concerned about habitat destruction and excessive fishing pressure in Stellwagen Bank National Marine Sanctuary, and write to register my support for the creation of fully protected ocean wildlife and habitat areas through the Sanctuary's management plan review process.

Stellwagen Bank is a unique ocean ecosystem that sustains a rich diversity of marine life. Pollution, excessive fishing pressure, and damaging fishing practices threaten the well being of these distinctive creatures and critical habitats. Stellwagen Bank receives important protections as a national marine sanctuary; however, new measures are needed to help restore declining fisheries and preserve habitat.

Compelling scientific evidence supports the establishment of fully protected ocean wildlife and habitat areas as a way to address these problems. By leaving a portion of our coastal waters undisturbed, ocean wildlife and habitat areas can restore biological diversity and provide a safe haven for species now in decline. The resulting protected areas can also provide tangible, long-term benefits to fishermen. New England's economy and future depend on a healthy marine environment.

Please register my support for the creation of fully protected ocean wildlife and habitat areas within Stellwagen Bank National Marine Sanctuary.

Sincerely,

Richard Lerro

Richard Lerro
1318 Massachusetts Ave SE
Washington, DC 20003-1539

Marc Lerro

Ind 1

I am writing to express my support a speed limit for boaters in the Sanctuary. This should be a priority since Stellwagen Sanctuary was created largely as a haven for whales. Whales need all the help they can get from the growing problem of too many boats going too fast.

Stellwagen Bank National Marine Sanctuary

please support a speed limit within The Whaling Sanctuary. The Sanctuary was created largely as a haven for whales. That should be the priority of the Sanctuary mission.

Thank-You,

Shirley Kovar
1 S. 561 Yeden Dr.
Winfield, Il.
60190

Rabbits, Henry Carter • Art from Fine Art Photographs, London, England

Subject: [Fwd: [Fwd: [FWD: Fwd: NAVY SONAR MAY SILENCE THE OCEANS--Join us in supporting all marine life]]]
Date: Wed, 07 Aug 2002 09:14:06 -0400
From: "Craig MacDonald" <Craig.MacDonald@noaa.gov>
To: Kate VanDine <Kate.Vandine@noaa.gov>

Kate - Does this constitute a comment for MPR? Craig

Subject: [Fwd: [FWD: Fwd: NAVY SONAR MAY SILENCE THE OCEANS--Join us in supporting all marine life]]
Date: Tue, 06 Aug 2002 16:12:30 -0400
From: "Sandi Dentino" <Sandi.Dentino@noaa.gov>
Organization: OCRM
To: Craig MacDonald <Craig.MacDonald@noaa.gov>

From the web site...

-------- Original Message --------
Subject: [FWD: Fwd: NAVY SONAR MAY SILENCE THE OCEANS--Join us in supporting all marine life]
Resent-From: Stellwagen@noaa.gov
Date: Tue, 06 Aug 2002 15:07:28 -0400
From: <AuroraMaryKilai@netscape.net>
To: stellwagen@noaa.gov

Hello,

I recently participated in a whale watch out of Boston harbor with a group of youth from Hudson Montessori summer camp. Although we didn't see any whales that day, it was an enjoyable trip. Our guide was very knowledgable and shared a lot of interesting information with us. It's nice to know our marine life is being watched and cared for.
Thank you.

It is because of your dedication to marine life that I am writing you. You may already be aware of this Navy sonar program, but I thought I would bring it to your attention anyway (just in case you didn't know about it!)

I have already expressed my concerns to my senator and state representative. Please forward this to other people you know who may be concerned as well. The more our voices are heard, the better the chance there is to protect the whales, dolphins and other marine life.

Thank you.

Peace, Rev. Aurora Mary Kilai

Subject: Fwd: NAVY SONAR MAY SILENCE THE OCEANS--Join us in supporting all marine life
Date: Fri, 2 Aug 2002 12:04:03 EDT
From: Pollyapw@aol.com
To: Pollyapw@aol.com

This is mailed to the CCiA mailing list, hoping you will be inspired to act. Thanks.
Polly (Pat is away, will be back by the meeting next Thursday.)

Subject: NAVY SONAR MAY SILENCE THE OCEANS--Join us in supporting all marine life
Date: Fri, 2 Aug 2002 10:47:08 -0400
From: "Betsy Ritchie" <trilogy-has@worldnet.att.net>
To: "Polly Memhard" <pollyapw@aol.com>

Friends,

This is a wonderful opportunity to show your compassion and support for the world's oceans. Despite significant efforts by advocacy groups and concerned marine mammal scientists for the past several years, the government has approved the Navy's deployment of the Low Frequency Active Sonar (LFAS) in 80% of the world's oceans, effective **August 15, 2002**, for five years. The LFAS creates a powerful sound and pressure wave that can affect an area bigger than the size of Texas. The effective sound of the LFAS is roughly equivalent to being 20 feet away from a Saturn rocket at takeoff. For animals such as whales and dolphins whose lives depend on hearing, this is a potentially harmful and deadly concern. Other concerns include:

- Conclusive link of active sonar to strandings and deaths of whales.
- Evidence of significant disruption of communication, migration, breeding, and other behaviors of marine mammals.
- Documented dangers to divers and swimmers at levels less than the level the sonar is designed to operate.
- Approval by the National Marine Fisheries Service for the Navy to NOT comply with Federal environmental regulations such as the Marine Mammal Protection Act.
- Many unanswered questions and outstanding concerns that have not been adequately addressed in the documents the Navy prepared.

We are asking you to join in supporting our oceans and choosing compassion and love as ways of life rather than hate and fear. You can provide your support by (1) calling or sending the below sample letter to your representatives of Congress (click on the below links to get your state's representatives) and by (2) forwarding this e-mail to EVERYONE you know.

Thank you!
Betsy Ritchie
Cultural Creatives in Action

For more information on the LFAS and concerns of the impacts to marine wildlife, go to:
www.nrdc.org/wildlife/marine/nlfa.asp

To find your state senator(s) contact information, go to:
www.senate.gov/contacting/index.cfm

To find your state representative(s) contact information, go to:
www.house.gov/writerep/

SAMPLE LETTER

Dear ,

I am deeply concerned over the recent approval by the National Marine Fisheries Service (NMFS) of the U.S. Navy's plan to deploy the Low Frequency Active Sonar (LFAS) system, effective August 15, 2002, for five years. The Navy plans to use the LFAS in 80% of the planet's oceans, and poses a potentially significant and unacceptable risk to the marine mammals and other ocean life around the world. The intense level of noise that the LFAS generates travels far and fast in water, and is a particularly serious problem for marine animals such as whales and dolphins that have such exquisitely sensitive hearing and whose lives depend on their hearing.

Although the Navy prepared an Environmental Impact Statement (EIS) in accordance with environmental laws such as the National Environmental Policy Act (NEPA), other Federal environmental regulations are not being complied with. In particular, the Navy has been allowed an exemption from complying with the Marine Mammal Protection Act. This exemption allows the Navy to "take" marine mammals as a result of the deployment of the LFAS. In addition, the approval for the LFAS does not take into consideration the Endangered Species Act; there are a number of marine mammal species that are on the endangered species list.

There are many other concerns and unanswered questions about the short- and long-term impacts to the ocean's wildlife that have not been properly addressed in the EIS (January 2001), the Final Rule (July 16, 2002), or the Record of Decision (July 23, 2002). For example, there is evidence of adverse environmental impacts to various marine mammals (such as migration path changes, disruptions in communication and breeding, strandings, distressed behavior and panic, and deaths) from the Navy's testing of the LFAS and the mid-range sonar system now in use; these impacts have been inappropriately minimized. In addition, the potential risks to divers and swimmers are of concern (as documented by the Navy), but do not appear to have been adequately addressed in the documents.

Although the Navy believes that this system is essential for our country's security, I feel that national security MUST include a healthy global environment. There are other alternatives to the LFAS (if any are even needed at all!) that do not have such a negative impact to marine life. The major disruption that the LFAS could cause of the ocean's fragile and complex ecology--already weakened by overfishing, growing commercial traffic noise, and pollution--is unacceptable to me, and I wish to express my deep concern. I urge you to examine these questions SOON and support, with me, the ocean's precious wildlife and well-being.

Thank you for considering my views, and I look forward to hearing from you.

Peacefully,

Petition signed by 34 people (back of each letter)
asm

Monday, September 30, 2002

Management Plan Review Process Committee
Stellwagen Bank National Marine Sanctuary
175 Edward Foster Road
Scituate, MA 02066

Dear Superintendent,

I am concerned about habitat destruction and excessive fishing pressure in Stellwagen Bank National Marine Sanctuary, and write to register my support for the creation of fully protected ocean wildlife and habitat areas through the Sanctuary's management plan review process.

Stellwagen Bank is a unique ocean ecosystem that sustains a rich diversity of marine life. Pollution, excessive fishing pressure, and damaging fishing practices threaten the well being of distinctive creatures and critical habitats. Stellwagen Bank receives important protections as a national marine sanctuary; however, new measures are needed to help restore declining fisheries and preserve habitat.

Compelling scientific evidence supports the establishment of fully protected ocean wildlife and habitat areas where fishing and other extractive uses are prohibited as a way to address these problems. By leaving a portion of our coastal waters undisturbed, ocean wildlife and habitat areas can restore biological diversity and provide a safe haven for species now in decline. The resulting protected areas can also provide tangible, long-term benefits to fishermen. New England's economy and future depend on a healthy marine environment.

Please register my support for the creation of fully protected ocean wildlife and habitat areas within Stellwagen Bank National Marine Sanctuary.

Sincerely,

Students from Brandeis University

Students from Brandeis University

1

Name	Year
Robert Jackel	2004
Matt Cohen	2004
Kristen Stelljes	2003
Evan Paster	2004
Michael Hellman	2006
Rebecca G. Horwitz	2005
Lee Tisman	2004
[illegible] Cottrell	2003
[illegible]	2005
Laurence Steiner-Strauss	2003
Marissa Green	2004
Leah Berkowitz	2003
[illegible]	2003
[illegible]	2006
Hillary Yaffe	2003
[illegible]	2004

Name	Year

Name	Year	Name	Year
Benjamin Fertig	2003		
Elana Klein	2003		
Michael Snodgrass	2006		
Elizabeth Tran	2006		
Sarah B. Wane	2004		
Jennifer Slocum	2006		
Valerie Cheng	2004		
Lauren M Pinaus	2003		
Joshua L. Weiger	2003		
Shoshana Stern	2003		
Phil Cedar	2003		
Adam Perlin	2003		
Greg Leppo	2003		
Aziz Nekoufar	'03		
Allyson Levine	2006		
Jacquen Cummings	2004		
Elina Vengel	2005		
Cheryl Levine	2003		

The Whale Center of New England

Formerly the Cetacean Research Unit

A NON-PROFIT ORGANIZATION EMPHASIZING WHALE RESEARCH, CONSERVATION AND EDUCATION

Kate Van Dine
Management Plan Review Coordinator
Stellwagen Bank National Marine Sanctuary
175 Edward Foster Road
Scituate MA 02066

October 15, 2002

Dear Kate:

The Whale Center of New England is pleased that the Stellwagen Bank National Marine Sanctuary (SBNMS) is re-initiating their scoping phase of the Management Plan Review. We are pleased to address several issues that we would like to see the SBNMS consider as part of this review.

1) **Need for A Vision and Management Strategies**

The SBNMS has, since its dedication in 1993, never had a stated vision or end that it hopes to achieve. This has led to much confusion about what the Sanctuary should or should not be doing, and whether or not the actions it is taking are consistent with its long term goals. In order to make a revised management plan effective, we must first agree on a vision for the Sanctuary.

There is guidance in setting this vision that comes from the Marine Sanctuary Act itself. In Section 1431(b –Purposes and Policies)(6), the Act states that a National Marine Sanctuary is "to facilitate to the extent compatible *with the primary objective of resource protection*, all public and private uses of the resources of these marine areas not prohibited pursuant to other authorities" (emphasis added). The National Marine Sanctuary Program represents the only federal program, that I am aware of, that actively works to conserve ecosystems and biodiversity. Other agencies are heavily involved in single species management throughout the government, but no one has the freedom to have a vision for a conserved ecosystem like the SBNMS. We realize that there will be a number of pressures placed on SBNMS staff by industry voices with economic investment in the resources of the sanctuary, including (among others) whale watching companies, charter boat owners, and fishers. However, we strongly feel that despite this pressure, their needs should not be granted at the expense of the resources they are exploiting.

When creating a vision at this point, we are really starting from scratch. While we are aware that the current management regulations were handed down during congressional

PO Box 159 Gloucester, MA 01931-0159
978 281 6351 • fax 978 281 5666 • e-mail info@whalecenter.org • http//www.whalecenter.org

designation, we feel that they do not present a full compliment of restrictions that could lead to meaningful resource protection, nor do they address a coherent vision. The management plan review is a key time at which we can consider the goals of resource protection, the resources most in need of protection, and the suite of management activities that will get us to those goals. In essence, this is the first time we will have had the opportunity to create a vision for the Sanctuary.

Along with creating a coherent vision, effective resource management will be enhanced by setting out:

- long term management goals;
- steps necessary to achieve these stated goals; and
- evaluation criteria with which to measure progress is being made towards the stated goals.

2) **Boundary Considerations – Expansion of the boundary to include Jeffreys Ledge**

In the initial scoping meetings, we proposed a boundary expansion of the SBNMS to include the length of Jeffreys Ledge. Although time has passed, there has been little that would change the need and merit for protection of the full length of this important marine habitat.

When the Sanctuary was initially designated, the southeastern 1/3 of Jeffreys Ledge was included in the boundary, either as an afterthought or because it accidentally came below the line which connected the Massachusetts State Ocean Sanctuary and the area just north of Tillies Bank. As such, the Ledge is in the unusual situation of receiving official protection for a small part of its area, and the part that our data indicates is the least biologically important part for marine productivity and marine life.

While Jeffreys Ledge was clearly not the focus of the designation of the SBNMS, it meets all of the criteria for which Stellwagen Bank received official protection. It is an area of high topographical relief, which leads to upwelling and important marine productivity; it is an important feeding ground for marine mammals, sea birds, ground fish, and other marine predators; it is an important area for traditional fisheries, and because of its proximity to the well-developed coast of northeastern Massachusetts, New Hampshire, and southern Maine, it is vulnerable to human-induced habitat degradation.

In addition to these basic elements, there are several reasons why, in some ways, Jeffreys Ledge is a more important habitat for marine protection. Survey data collected from both trawls and, more recently, hydro-acoustic surveys indicate the Jeffreys Ledge is the single most important spawning habitat for the Gulf of Maine stock of herring (Clupea harengus). Herring are an important prey for marine mammals, including humpback, fin, and minke whales, Atlantic white-sided dolphins, Long finned pilot whales, and several pinnipeds, ground fish including cod and haddock, and predatory fish including blue fish, striped bass, and bluefin tuna. Combined with sand lance (Ammodytes spp.), they are the

primary baitfish upon which the Gulf of Maine ecosystem depends. In contrast, Stellwagen Bank is not a spawning area for herring or sand lance.

Jeffreys Ledge is also an important habitat for North Atlantic right whales, the most highly endangered of all whale species that occur in this ocean. Right whales have been an important component of SBNMS programs for many years, despite the fact that their presence within the boundary of the Sanctuary as it currently stands is uncommon. Recent published work done by our Center (reprint included) has indicated that Jeffreys Ledge may be a key fall feeding habitat for right whales. Hence, expansion of the boundary could allow additional protection for this species in an important part of their range.

Jeffreys Ledge also acts as a buffer zone in many years for many of the marine predators that use Stellwagen Bank. In numerous years when the cyclical sand lance populations have been low, many of the marine mammals and fish species that are often found on the Bank move to either Jeffreys Ledge or the Great South Channel. While the Channel is still a habitat based on sand lance prey, the Ledge represents a true buffer for the Stellwagen ecosystem. This has also been published in a peer-reviewed article, a copy of which is included.

In 1995, Stephen O'Leary (a Tufts University master's student), under the supervision of Brad Barr (former superintendent of the SBNMS) completed a "Policy Analysis of Management Options for Jeffreys Ledge." In his report (copy included), he considered three options for the Ledge: No protection, Boundary Extension, or Separate Designation. His conclusion was that Boundary Expansion was the preferred alternative of the three.

Currently, the SBNMS boundaries are arbitrary when compared with the natural system they are there to protect other than the inclusion of the length of Stellwagen Bank. Expanding the boundary to include Jeffreys Ledge would bring them into the realm of being biologically realistic and scientifically defensible. We would be glad to provide additional information on the arguments that support Sanctuary protection for this vital habitat. We urge the staff of the SBNMS to give this boundary expansion serious consideration.

3) **Speed restrictions to prevent marine mammal collisions in the Sanctuary**

Since the SBNMS was designated, there has been a major change in the way vessels transit the Bank itself and the Sanctuary overall. Vessel speeds have increased significantly, and there are now both mono-hulled and catamaran high-speed vessels that are used for both whale watching and passenger transit. Unfortunately, collisions between endangered whales and boats have increased during this period as well. In 1998, there were three collisions between whales and whale watching boats.

After these collisions took place, there were a series of meetings, which included SBNMS personnel, at which the whale watch guidelines were revised to better respond to concerns about speed and the risk of collision. All whale watch operators present at these

meetings agreed to abide by these guidelines. However, there has been little effective compliance in the field. We now regularly see vessels approaching whales at close range (less than ¼ mile) at high speeds, although they were supposed to slow to less than 13 knots at 2-mile range.

In addition to the risk from high-speed vessels, other vessel types represent risks of collision. Tuna fishermen often target areas where marine life, including whales, is present. These fishermen often transit close to whales with little regard for them, and several observers have seen numerous close calls. Recreational vessels also often transit through high use whale areas with little regard to collision risk, and there are numerous humpback and fin whales that bear scars from collisions with boats where scars are indicative of smaller propellers turning at high speed.

We feel that the SBNMS needs to address this risk, which is only likely to increase in the absence of proactive management actions. Since endangered marine mammals were identified in the original FEIS and management plan as an important resource of the sanctuary, such protection seems to fit well within the purview of management actions that would benefit important marine life.

While we feel that restrictions on vessel speed are important, we recognize and concur with industry concerns that there are many areas where whale occurrence is less likely to take place, and speed restrictions may be an undue burden. We are aware that an extensive review of whale distribution is being undertaken using the long-term databases of both our work and that of the Center for Coastal Studies. We suggest that the results of such a review be used to guide actions that are likely to benefit whales rather than placing such restrictions over a wide area with little regard to the extensive information that is available.

Finally, we also feel that there should not be discrimination among species of whales for protection. We have often heard that whale watch boats will not slow down as they pass by a little-regarded species, such as minke whales, in order to get to an area that is occupied by the larger humpback or fin whales that they target. However, the SBNMS is to protect all of these species, and the inconvenience to captains is not sufficient justification for putting these animals at risk.

As far as the actual management actions taken by the SBNMS, we do not at this point have a preference as to whether the approach of the current guidelines (placing zones around animals of known presence) is used, or restrictions are placed in areas of traditional high use regardless of whether or not a whale is known to be present. However, we do want to remind SBNMS staff that in only one of the cases of collision that we know of was the whale that was struck seen prior to the strike. Hence, management actions must account for the "unseen" whale that is, in fact, at greatest risk.

Finally, we also want to convey the necessity for whatever actions are taken be codified as regulation rather than an action which looks for voluntary compliance. Whale watch operators have shown again and again that they will not voluntarily comply with

inconvenient guidelines, despite putting whales at risk. SBNMS actions need to be regulatory and have sufficient enforcement to provide the protection that they intend (see below).

4) Require certification for any vessels engaged in whale watching in the sanctuary

Whale watching is one of the primary activities going on within the boundaries of the Sanctuary. There are whale-watching guidelines for the northeast region, but these are often not known or not followed. Boats often crowd whales, cause changes in behavior, such as interruption of feeding, or move too close to whales while in the Sanctuary. Many of these vessel operators do not understand "harassment" or how to identify when it is occurring. We need to guarantee that the whales are allowed to conduct their natural activities free of harassment, that the sanctuary is truly a "refuge" for these endangered animals.

Any vessel operator approaching whales for the purpose of watching should be well educated as to the safe operation of the vessel around whales. There are many factors in the safe movement of boats around whales. The guidelines for whale watching in the northeast region include no head-on approach, keeping a parallel course to whales, and no approaches closer than one hundred feet.

For this reason, we believe that any vessel operator within the Sanctuary should be required to go through training that will teach them how to properly operate their vessel around whales, and to understand something about the behavior and biology of the whales they are approaching. A refresher course for even the most experienced captains may reinforce the guidelines and may encourage captains to adhere to them. This training should be in the form of a class instructed by a marine mammal biologist. A certification to approach whales would be then be issued only to those operators who earned a minimum score.

Permitted vessel operators would have to display a visual signal (e.g. a flag, decal or other similar signage) demonstrating completion of the training and a passing score on the test. Only permitted vessel operators would be allowed to approach within 500 yards of whales for the purposes of whale watching. Sport and commercial fishers engaged in fishing would be exempt from the permitting requirement because their activities often places them within 500 yards of whales, but they presumably are not actively approaching whales. Further, we fell that if an operator is seen violating approach guidelines and/or regulations, their certification may be revoked for a set period of time and/or until they have been re-certified by the SBNMS.

While we ultimately agree that whale watching is an important use of the SBNMS, we also feel that this is an area where it is incumbent to insure minimal disturbance of the whales that the Sanctuary was designated, in part, to protect. Approaching an endangered species for personal enjoyment is not an inalienable right of boaters. While the tolerance of New England's whales to vessel approaches is well known, this certification will provide an additional insurance that whales are not disturbed in the Sanctuary.

5) Enact measures to protect aggregations of endangered whales in the SBNMS

While we noted above that there needs to be clarification about the suite of resources that the SBNMS was designated to protect, there can be little doubt that endangered humpback and fin whales were part of the impetus for the site's nomination in 1981. As such, it is reasonable to assume that management measures that would add protection for these endangered species as their populations recover would be consistent with SBNMS goals.

The long-standing problem of large whale entanglement in fixed fishing gear has been discussed extensively in the past six years. When the Marine Mammal Protection Act of 1972 was last reauthorized, it set up a series of "Take Reduction Teams" (TRT) to address the entanglement problem. One such team has addressed the problem in regard to large whales in the North Atlantic. Since the team's formation, numerous measures have been instituted including fishing gear modifications and both seasonal and dynamic area closures for highly endangered North Atlantic right whale aggregations.

Early in its deliberations, the Large Whale TRT made it clear that, because of the status and severity of the problem of entanglements and northern right whales, they were going to emphasize that species in their management actions, and hope that such actions would also benefit the other endangered whales they were tasked to address. While this is understandable given the immediacy of solving right whale entanglements, their limited presence in Sanctuary waters adds inadequate protection for humpback and fin whales.

We know that humpback whale entanglements take place in the SBNMS. In April, 1985, we witnessed a young humpback whale become entangled in a gill net on northern Stellwagen Bank. This observation was later published as a note in Marine Mammal Science (enclosed). In July 1990, we have reason to believe that three humpbacks were entangled within 2 weeks in the same location. In April, 1998, we again watched a humpback whale become entangled in a gill net on southern Stellwagen Bank. Hence, we know that there is a risk to these animals in the Sanctuary.

Given that we know that a risk of entanglement to humpback whales (and presumably fin whales) exists in the SBNMS, we feel that it is consistent with the purposes of the Sanctuary to take precautionary measures to minimize these risks in the Sanctuary. These measures could include, but may not be limited to, additional gear modifications to minimize risk, or limited area exclusions of certain types of fishery gear when aggregations of these species are located within a part of the SBNMS. The latter suggestion is based on the dynamic area management system NMFS has put in place on a wider scale to minimize risk in North Atlantic right whales, which we feel could easily be applied to the other species. If this were to be applied, we would suggest that the SBNMS should redefine what represents a sufficient aggregation of whales to trigger a management action, and over what area such a system should be implemented (concentrations should be higher than 3 in 75 square miles, and the area of risk may be more limited). The analysis that was conducted to determine the basis for the dynamic

closure system for right whales could easily be replicated with the sighting data the Sanctuary has obtained from both our group and the Center for Coastal Studies in their recent efforts.

Finally, we encourage the SBNMS to work with NMFS to continue to improve fishery gear modifications to minimize risk to whales. The Sanctuary could do this by funding additional work, encouraging fishermen to test new modifications in the SBNMS, or in other ways that increase the likelihood that fishermen and whales will be able to co-exist peacefully in the SBNMS.

6) **Insure remaining closure of the Western Gulf of Maine Fishery Closure area as a natural control to better determine the effects of bottom trawl fishing.**

For several years now, a rectangular area in the eastern portion of the SBNMS has been closed to ground fishing as result of management actions taken by the New England Fishery Management Council. While it was not intended to do so, one important effect of this action has been to set up a unique natural experiment about what happens to habitats within the area if they are not disturbed by traditional fishery operations.

Previous work that has been done by SBNMS staff, as well as other scientists, has started to come up with compelling evidence that areas that are heavily trawled can have extensive bottom damage. Sonar scans and underwater footage from underwater ROV's has shown that in portions of the sanctuary the bottom is covered with a series of crisscrossing tracks from repeat trawling. This level of activity may prevent organisms that depend on an undisturbed sea floor from inhabiting the area, and may greatly reduce the biodiversity of the habitat.

One of the important missions of a National Marine Sanctuary is to "to maintain the natural biological communities in the national marine sanctuaries, and to protect, and, where appropriate, restore and enhance natural habitats, populations, and ecological processes" (National Marine Sanctuary Act Section 1431(b)(3)), as well as to "to support, promote, and coordinate scientific research on, and long-term monitoring of, the resources of these marine areas" (National Marine Sanctuary Act Section 1431(b)(5)). For both of these reasons, it is critical that a portion of the Sanctuary be protected from detrimental fishery activity, so we can understand the effects of this activity for future management.

Although this area is currently closed to fisheries, as ground fish stocks recover the Fishery Management Council can at any time re-open that area. If this were to happen without consultation with SBNMS staff, irreplaceable information could be lost. In order to insure that this does not happen, we suggest that the Sanctuary work with the council in order to keep the area closed. Should this not be possible, we fell it is urgent for SBNMS staff to have the power in place to independently prevent activities which could destroy the protection the bottom has received. Finally, we suggest that the Sanctuary include monitoring of the bottom of this area be an annual research priority.

have taken place. While the threat of such actions can be important, it does not substitute for an active presence in the area.

Years ago, in a forum on whale watching put together by the Center for Coastal Studies, Capt. James Douglass of Cape Ann Whale Watch remarked that on his drive down to the forum, he had been going quickly until he passed a speed trap which he was able to see. He drove much more slowly after that, and used the analogy to the effectiveness of having an on-water enforcement presence. Law enforcement officers always say that they are effective if they either prosecute someone for committing a crime, or prevent a crime from happening because of their visible presence. The importance of this on-water presence by SBNMS enforcement agents cannot be over-emphasized.

We strongly encourage the SBNMS to make consistent on-site enforcement a cornerstone of the revised management plan.

8) **Increase Sanctuary Visibility**

The SBNMS has been lacking in visibility in the public eye. This is certainly understandable, as it starts with several strikes against it. The physical sanctuary itself does not start for several miles from the coast, and there is no on-water "signage" (as there would be for a terrestrial counterpart, like a National Park or National Wildlife Refuge). The headquarters of the Sanctuary is located far out on a bluff in Scituate, which is itself a remote and relatively little visited town. Since both the physical entity of the site and the headquarters are out of the public's path in many cases, it is easy for the Sanctuary to be ignored. In a recent study done for the Sanctuary, 80.8% of local residents who had not been whale watching had never heard of Stellwagen Bank, so we can only assume that at least that number did not know it was a National Marine Sanctuary. In order for the SBNMS to be really effective, its visibility needs to be increased.

In order to facilitate this, we feel that the Sanctuary needs to make better use of its partnerships with other agencies in more visible locations. The Visitor's Center that was established in Provincetown is an important start, but it needs to be just that – a start, not an end point. Similar sites need to be developed in both Boston and on the North Shore. Boston is critical because of the shear number of people who live and visit there, while the North Shore is key not only because of its number of residents and visitors, but also the high number of user groups (including whale watchers and fishers) who use ports like Gloucester and Salem to access the Sanctuary. Even in the existing display in Provincetown, the Visitor's Center needs higher visibility than it has currently been given.

Finally, the SBNMS can and should make good use out of partnerships with other agencies in order to maximize the effectiveness of their limited resources. This partnership should include other federal agencies, but should also include Non-

In the original management plan, as limited as it was, disturbance of the sea floor was one of the activities (excepting traditional fisheries) which was specifically prevented. Clearly the evidence that has come to light since indicates that there is an uneasy alliance between bottom trawling and the spirit behind this management restriction. If we are to be able to truly understand how to protect the biodiversity of the SBNMS, the information from this habitat control is absolutely critical.

As an aside to this measure, we also need a final clarification as to the role of the Sanctuary in fisheries management. Many people are under the impression that they were told that fisheries in the SBNMS were "never to be touched" during the initial designation process. Having been at those meetings, we know that this was not stated as strongly as commonly reported, but some assurances were implied. In order to make sure that everyone is clear on what the SBNMS may or may not do in terms of fishery management, a joint clarification issued by the regional Fishery Management Council, the National Marine Fisheries Service, and the SBNMS would go a long way towards clarifying this area in which there is much confusion.

7) **Effective Enforcement**

While an effective management plan is obviously critical to an effectively managed Sanctuary, the best management plan means little without effective on-water enforcement from the Sanctuary. This enforcement needs to be directed specifically at making sure that sanctuary management actions are adhered to, and cannot effectively be combined with the priorities inherent in agreements with other agencies.

The need for effective enforcement has made itself clear over the past several years. Whale watch companies have shown repeatedly that without regulations and consistent enforcement, they will ignore restrictions that they themselves have agreed to. We know that fishers will deliberately not report marine mammals for fear of the consequences of their known abundance (i.e. temporary fishery restrictions through the Dynamic Area Management System of the National Marine Fisheries Service). In many cases, private boaters are not aware of the management actions or restriction in the Sanctuary (meaning an educational component, such as the "See A Spout, Watch Out" campaign, is vital as well).

We also know that the SBNMS has, in the past, used inter-agency agreements with the U.S. Coast Guard and the Massachusetts Department of Fish and wildlife Office of Environmental Law Enforcement in order to carry out their on-water enforcement. This has had limited success. Often these agencies have had other priorities or commitments that have prevented them from being the consistent on-water presence they need to be. The times they have been present have demonstrated, to me, that compliance really increases from all user groups.

The presence of an enforcement agent to deal with Sanctuary issues, added in recent years, has been a good start. However, his enforcement only can work on violations that

governmental partners, such as has been done with the Center for Coastal Studies on the South Shore and the New England Aquarium in Boston. We would also emphasize the importance of increased visibility on the North Shore, especially in Gloucester. Many users of the Sanctuary are found in this coastal town, and both interest and paranoia runs high (as witnessed by the large turnout, much of which was from the fishing community, at the Scoping Meeting in Gloucester on September 30, 2002).

9) **Prioritize living marine resources over historical cultural resources in future work**

In the summer of 2002, the finding of the remains of the ferry *Portland* made headlines around the country. This announcement has led to an enthusiasm for continued exploration of other historical resources, including other wrecks, which may be present in the Sanctuary.

We agree that the exploration of other potential wreck targets in and around the Sanctuary is intriguing, we feel that there are a host of other institutions in the area that are equally likely to do a satisfactory job of exploring these. The SBNMS has limited resources, and those resources need to be used carefully in order to carry out the Sanctuary's work. There are few other groups that are charged with protecting the marine resources as the SBNMS is, and we feel that the maximal amount of resources needs to be devoted to this end. This is especially true if the items we list above (increased enforcement of new provisions to limit speeds, have a no-trawl zone, and to extend the Sanctuary's boundaries) are put into place.

We thank you again for the opportunity to provide input into the early stages of the management plan review, and look forward to continuing to work with you throughout the process.

Sincerely,

Mason Weinrich
Executive Director

agencies in order to maximize the effectiveness of their limited resources. This partnership should include other federal agencies, but should also include Non-

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RIGHT WHALES (*EUBALAENA GLACIALIS*) ON JEFFREYS LEDGE: A HABITAT OF UNRECOGNIZED IMPORTANCE?

MASON T. WEINRICH
Cetacean Research Unit,
P. O. Box 159, Gloucester, Massachusetts 01930, U.S.A.
E-mail: mason@cetacean.org

ROBERT D. KENNEY
University of Rhode Island,
Graduate School of Oceanography, Box 41—Bay Campus,
Narragansett, Rhode Island 02882-1197, U.S.A.

PHILLIP K. HAMILTON
Right Whale Research Program,
New England Aquarium,
Central Wharf, Boston, Massachusetts 02110, U.S.A.

ABSTRACT

North Atlantic right whales (*Eubalaena glacialis*) are known to spend the majority of the year between the Great South Channel southeast of Cape Cod, and the Nova Scotian shelf. We examined sightings of right whales on and around Jeffreys Ledge, a 54-km-long glacial deposit off the coast of northern Massachusetts, New Hampshire, and Maine. Sightings on Jeffreys Ledge were extracted from three data sets: (1) a systematic survey of the entire northeastern continental shelf between 1979 and 1982, (2) whale-watch and research-cruise sighting data from 1984 to 1997, and (3) a collaborative database of sightings collected by organizations conducting right whale research and all other available sources. Each database supported two seasonal sighting peaks. During summer (especially July and August) sightings were primarily of mother-calf pairs. Several cow-calf pairs were seen over several days to weeks. Several females were resighted in more than one year, but only when calves were present. During October, November, and December, sightings included all age classes, surface-feeding behavior was frequently observed, and some animals were resighted over several weeks. Given the relatively reduced sighting effort during fall, this number of sightings is surprising. During the 20 yr of observations, 52 of 374 photo-identified North Atlantic right whales (13.9%) were seen at least once on Jeffreys Ledge. We suggest that Jeffreys Ledge may be a more important right whale habitat than previously believed, and that it may play an important role in annual movements and distribution of this population.

Key words: right whale, *Eubalaena glacialis*, Jeffreys Ledge, whale migration, whale distribution.

The northern right whale (*Eubalaena glacialis*) is the world's most endangered large whale species. Some 300–350 animals currently live in the western North Atlantic Ocean (Knowlton *et al.* 1994), and remnant populations persist in the North Pacific (Scarff 1986). This species was hunted extensively until the early part of the 20th century but has been protected from commercial whaling officially since 1935 (Brownell *et al.* 1986).

In the past two decades, intensive surveys in certain high-use habitats have revealed a basic annual pattern of movements of the North Atlantic population (Winn *et al.* 1986, Kraus and Kenney 1991). During winter, a portion of the population (primarily mothers with newborn calves, and some juveniles) occurs off the coast of the southeastern U.S. During late winter, these whales move northward and join other right whales, first in Cape Cod Bay and, shortly after, in the Great South Channel (between Cape Cod and Georges Bank) (Hamilton and Mayo 1990, Kenney *et al.* 1995). From there, many animals move north to the Bay of Fundy and the Nova Scotian shelf for the summer, remaining until at least early autumn (Mitchell *et al.* 1986, Kraus *et al.* 1988, Murison and Gaskin 1989, Gaskin 1991).

Between the early fall disappearance of right whales from the Bay of Fundy and winter occurrence of calving females and juveniles off the southern U.S. and late winter appearance of all segments of the population in Cape Cod Bay, little is known of their distribution and almost nothing is known of their movements.

While the distribution and occurrence of right whales is well documented in high-use habitats such as the southeastern U.S. (Kraus *et al.* 1988, Kraus and Kenney 1991), the Great South Channel (Kenney *et al.* 1995), Cape Cod Bay (Hamilton and Mayo 1990, Kraus and Kenney 1991), and the Bay of Fundy and Scotian shelf (Mitchell *et al.* 1986, Kraus *et al.* 1988, Murison and Gaskin 1989, Gaskin 1991), little is known outside those areas. Survey and other research effort has been highly biased towards areas of known use. In this paper we examine sighting records of right whales on and around Jeffreys Ledge, an underwater shoal located off the New England (especially New Hampshire and Maine) coastline, which has not been previously identified as an important habitat for northern right whales.

Methods

Jeffreys Ledge is a complex, shallow glacial deposit, characterized by depths of 45–61 m and a length of approximately 54 km (Fig. 1). Depths of 85–120 m occur on the west side of the Ledge ("Scantum's Basin") and 100–150 m to the east. Bottom substrate is a mixture of rocks, sand and gravel, and mud, both on the Ledge itself and in the deeper basins. We defined the Jeffreys Ledge "region" for sightings data as lying between 43°20′N and 42°35′N, and west of 69°50′W to the shoreline.

Sighting data for this paper were collected from three programs: (1) a comprehensive cetacean survey program conducted off the northeastern United States (1979–1981), (2) commercial whale watch (1982–1996) and dedicated

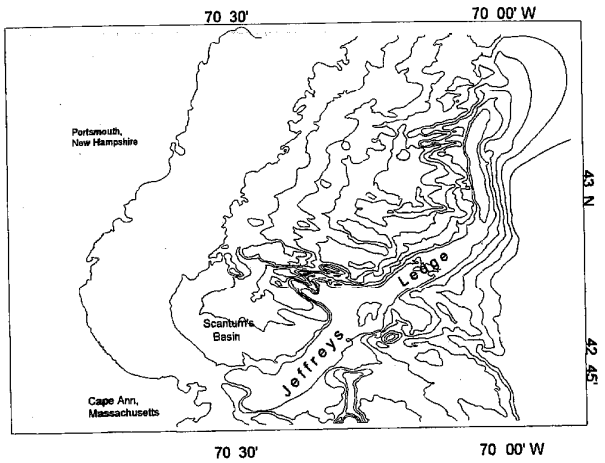

Figure 1. Bathymetric contour plot of Jeffreys Ledge area.

vessel coverage (1984–1997); and (3) a comprehensive database of all reported sightings of North Atlantic right whales from any available source through 1994. Details of these programs are as follows:

(1) The Cetacean and Turtle Assessment Program (CETAP) was conducted by the University of Rhode Island (URI) from late 1978 through early 1982 for the continental shelf of the United States from Cape Hatteras to Nova Scotia (CETAP 1982). It included dedicated surveys from air and shipboard, a platforms-of-opportunity (POP) survey program in which trained observers were placed aboard a wide variety of aircraft and ships working in the study area, and collection of opportunistic sightings from all available sources, including historical data which existed prior to the study. CETAP data are archived at URI (see below). Trackline and environmental information included with the dedicated and POP survey data can be used to quantify survey effort as length of survey trackline completed within defined criteria (observers on watch, sea state of Beaufort 3 or below, visibility at least two nautical miles, and aircraft altitude 305 m or lower). For details of the CETAP surveys or the SPUE methods, see CETAP (1982), Kenney and Winn (1986), and Shoop and Kenney (1992).

(2) The Cetacean Research Unit (CRU) in Gloucester, Massachusetts, collected right whale sighting data from commercial whale watches between 1984 and 1996. Whale-watch vessels working out of Gloucester were used exclusively from 1984 to 1991, covering only the southern half of Jeffreys Ledge. In 1992 CRU instituted a sighting network of whale-watch boats from a number of ports in New Hampshire and southern Maine, which covered all of the Ledge regularly. Whale watches typically allowed two hours on or around the Ledge. Whale-watch cruises took place from May until October, with a heavy emphasis on the months of June through September. Whale

watches usually targeted areas where humpback whales were most common (see Weinrich *et al.* 1997 for additional details on whale-watch methodology).

Dedicated-vessel coverage by CRU took place aboard a 6.7-m vessel (1984–1992) or an 8.3-m vessel (1993–1997) departing from Gloucester, Massachusetts. Each cruise was 7–13 h long. These excursions took place from 1 April to 15 November in each year, with emphasis on work in April, October–November, and during opportunistic periods of reported whale concentration during May to September.

(3) Since 1986 a number of research groups and institutions have joined in a cooperative program, informally called the right whale "consortium." One aspect of the program is data sharing, with all sighting data being incorporated into a common database (the "consortium database"), which is managed and archived at URI. The original core of the database was the CETAP data. A copy of the photo-identification database from a right whale catalog is also maintained at URI, and the two databases are cross-referenced. Both the consortium and catalog databases include contributions from a wide variety of sources and so are the broadest available record of right whale occurrence in the western North Atlantic. Because of the varied nature of the data, it was impossible to quantify effort. However, all records for the Jeffreys Ledge area were extracted and summarized for analysis.

It should be noted that the three data sources utilized in this paper are not independent. At least some occurrences of right whales in the Jeffreys Ledge area are recorded in more than one. For example, when a right whale was sighted by CRU observers and photographed, the photos are contributed to NEA and incorporated into the catalog, and all catalog records not already included in the consortium database are added during annual updates. Wherever possible, we separated overlapping data by comparing sighting lists for duplication by day, location, or observer.

Individual right whales were identified through photography (usually using 35-mm cameras and 200–400-mm maximal focal length zoom lenses) of the callosities on the whale's head and additional scars or distinctive markings (Kraus *et al.* 1986). Photographs were matched against a collaborative catalog maintained at the New England Aquarium (NEA) (Kraus *et al.* 1986, Crone and Kraus 1990), and assigned numbers accordingly (listed as RWC (Right Whale Catalog) #). Life history details reported here originate from previous sighting information detailed in the catalog.

Results

CETAP Data

There were 13 sightings of 22 right whales on Jeffreys Ledge during the CETAP surveys (Table 1). Of these, 11 (84.6%) sightings of 18 (81.8%) whales were between October and December, during 35% of the total Jeffreys Ledge survey effort. December had both the greatest number of sightings (9) and the greatest number of individuals (15), all seen on 7 December 1978 (Fig.

Table 1. Effort and sightings data for right whales on Jeffreys Ledge from each of three data sets. Because the different data sets were not directly comparable, different summary variables are used for each.

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Cetap data													
Survey hours	11.4	460	417	489	137.2	618.1	340.6	490.4	303.2	382.9	797.7	568.9	5,016
Sightings	0	0	0	0	0	1	1	0	0	1	1	9	13
Individuals	0	0	0	0	0	1	3	0	0	1	2	15	22
Cow/calf pairs	0	0	0	0	0	0	0	0	0	0	1	0	1
CRU data													
Vessel days	0	0	0	23	69	151	249	234	174	108	0	0	1,008
Sightings	0	0	0	2	0	0	7	8	13	13	0	0	43
Individuals	0	0	0	2	0	0	9	9	19	27	0	0	66
Cow/calf pairs	0	0	0	1	0	0	2	2	0	4	0	0	9
Consortium data													
Sightings	3	0	3	8	13	4	83	34	21	34	11	17	231
Individuals	3	0	7	13	19	5	103	69	31	50	22	26	348
Cow/calf pairs	0	0	0	1	3	1	18	14	5	2	1	0	45
Catalog records	0	0	0	0	3	1	44	15	17	17	1	2	101
Different animals ID'd	0	0	0	0	3	1	21	12	12	16	1	2	52*
Cow/calf pairs ID'd	0	0	0	0	2	0	20	5	3	2	0	0	33

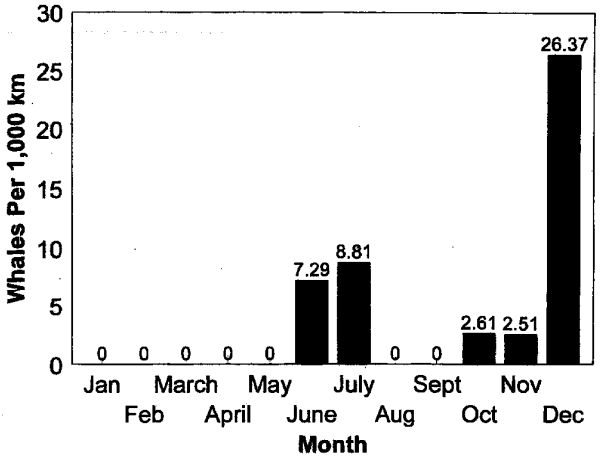

Figure 2. Sightings of right whales per 1,000 km for CETAP database, 1978–1981.

2). Survey effort was greatest in June, November, and December, with substantial coverage in all months except January and May (Table 1). Only one cow/calf pair was seen (in November) during the CETAP surveys.

CRU Data

There were 43 sightings of 66 individuals on Jeffreys Ledge (Table 1). Of these, 34 (79.0%) sightings of 55 (87.3%) individuals were seen between August and October. September and October had the greatest number of sightings (13 in each month), with more individuals (27) being seen in October than in any other single month (Fig. 3). By comparison, survey effort was greatest during July and August (when 47.9% of total survey effort took place), with secondary peaks in June and September (Table 1). The single highest daily count was seven whales photographed on 31 October 1994. Nine of the 43 (20.9%) sightings were of cow/calf pairs: one (11.1%) in April, two (22.2%) in July, two (22.2%) in August, and four (44.5%) in October.

Consortium Database

There were 231 sightings of 348 whales on Jeffreys Ledge between 1972 and 1994 (Table 1). Whales were seen in all months except February. More whales were seen in July than any other month, when 103 (29.6%) animals were recorded. Other months with high totals were August (69 individuals, or 19.8%), and October (50 individuals, or 14.3%). Between 22 and 31 whales also were seen in each of September, November, and December. In total, 301 whales were seen between July and December, while there were only 47 animals between January and May. Cow/calf pairs were seen on 45 occasions, of

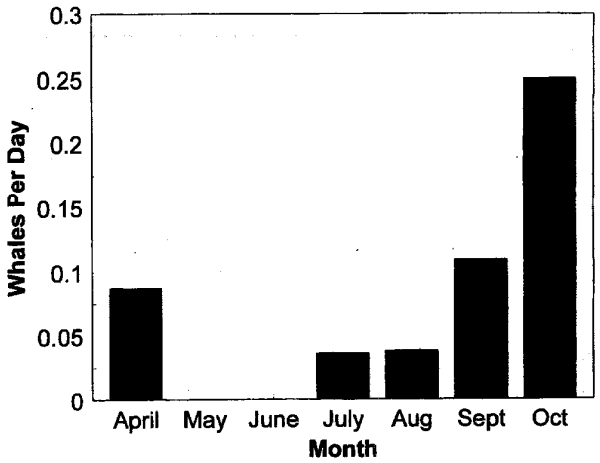

Figure 3. Sightings of right whales per day, CRU database 1984–1997.

which 32 (71.1%) were seen during July and August, and only 8 (17.7%) during September through December.

In total, there are 101 catalog records from Jeffreys Ledge (0.93% of the total 10,833 catalog records) of 52 different individuals, or 13.9% of the 374 photographed whales. Out of the twenty cow/calf catalog records from Jeffreys Ledge in July, 18 (90%) were of only five females. Several whales were resighted on Jeffreys Ledge both within the same year and between years. RWC #1266 was photographed on eight occasions in three years: twice in July 1982, five times in July and August 1985, and once in July 1988 (all years in which she had a calf). RWC #1152 (a male) was seen on Jeffreys Ledge on five occasions in October 1983 and September 1984. RWC #1505 (then a 9-yr old male) was seen on 10, 11, and 18 September 1994. A mother-calf pair (RWC #1412 and #1413) were photographed on Jeffreys Ledge on 6 October and 21 October 1984, a 15-day sighting interval. This female was rephotographed with a different calf on 4 and 5 October 1997; no other sightings of this whale exist in the catalog, either from the calving grounds or any of the other known high-use areas.

Discussion

The sighting data from all three sources suggest that Jeffreys Ledge may be a more important habitat for right whales, both in terms of numbers of animals and consistency of occurrence, than has been previously recognized. The area appears to be one where right whales are seen on a regular basis, especially when animals may be moving to and from more northern waters. Furthermore, the records from Jeffreys Ledge represent the greatest number of sightings during the fall, when the movements of right whales are poorly known.

The highest number of right whale sightings in the consortium database for Jeffreys Ledge was during July and August (49.8% of total sightings). This is a period when most, if not all, animals have departed the Great South Channel (Kenney *et al.* 1995) and are arriving in the Bay of Fundy (Winn *et al.* 1986, Kraus and Kenney 1991). Except for mother-calf pairs, whales apparently remained on the Ledge for only short periods of time. This suggests that many of the Jeffreys Ledge sightings were of transient whales moving toward the Bay of Fundy and the Scotian Shelf, which lies approximately 200 km to the northeast of Jeffreys Ledge. There may be little energetic advantage to remaining for extended periods in the Jeffreys Ledge area during the summer, given the high probability that richer prey resources are available in the Nova Scotian feeding grounds.

Mother-calf pairs were disproportionately represented on the Ledge during this time. This is not unexpected since right whale mother-calf pairs are sighted in many areas throughout the Gulf of Maine during the late spring and early summer.[1] It is possible that mothers may also be exposing their calves to "traditional" feeding habitats at this time and may be bringing their calves to Jeffreys Ledge for this reason. Radio-tagging studies have shown that mother-calf pairs traverse unusually large distances when compared to other classes of whales (Mate *et al.* 1997), and studies of humpback whales have shown that calves are more likely to return to a specific location if they were first sighted there as calves (Weinrich 1998). Certainly this is supported by animals such as #1266 and #1412, who have each been seen on multiple occasions in multiple years when they had a calf, but not in intervening years.

Perhaps more surprising is the number and consistency of sightings of right whales on Jeffreys Ledge during the fall. This is a period where observer effort is at its lowest, especially in the CRU database. Whale-watching boats all terminate their season by the end of October for insurance reasons and greatly reduce their number of trips after the start of September. One would therefore expect a strong bias towards summer sightings. Despite this, September and October were the months at which sightings peaked in the CRU data. CETAP data show a similar peak, much of which can be attributable to a cluster of nine sightings of 15 whales on a single December day. This shows that large concentrations of whales have occurred at times when coverage in other areas may have not recorded them at all.

It is striking that in the fall we do not see the disproportionate number of mother-calf pairs that we do during summer sightings, as evidenced in both the CRU and consortium database. Calves may be weaned and separated from their mother by this time. In humpback whales weaning occurs as early as mid-October in a few mother-calf pairs (Baraff and Weinrich 1993), and right whale calves can survive weaning by this time (Hamilton *et al.* 1996). However, we believe it is unlikely that weaning alone would account for the lower proportion of cow-calf pairs. Rather, this may simply be an important feeding

[1] Personal communication from Scott Kraus, New England Aquarium, Central Wharf, Boston, MA 02110, January 1998.

area for the population as a whole following their departure from the Bay of Fundy, with the number of mother-calf pairs representative of the population as a whole. During the summer most right whales are passing through en route towards rich feeding grounds in the Bay of Fundy/Scotian Shelf area, while mothers with calves are lingering for longer periods.

Jeffreys Ledge may also be an important feeding habitat for right whales during the fall. Surface skimming and apparent near-surface feeding (whale leaving slicks constantly on the surface while spending prolonged periods of time (up to several hours) in areas less than 1 km diameter) were commonly seen during fall sightings. Typically during July and August whales were observed traveling, and we have no observations of surface-feeding behavior. The low level of observer coverage and photo-identification effort would greatly underestimate length of stay during the fall period, but our data show several individuals (including the only residency of any animals besides cow/calf pairs) who were resighted for at least a week within the same year.

Further evidence for prolonged occupation of Jeffreys Ledge in the fall comes from satellite tagging data (Mate *et al.* 1992, 1997). An adult male right whale tagged in the Bay of Fundy on 15 October 1989 left the Bay shortly after being tagged and then spent at least 10 d on or near Jeffreys Ledge (25 October–5 November 1989). Tag transmissions ceased while the whale was still around the Ledge, so this was a minimum occupancy period.

We assume that right whales remain in the Bay of Fundy as long as prey is sufficient. Once prey availability falls below a certain level, however, the whales will likely abandon that area and may begin a migration toward their winter habitats, either the southeastern United States coast (especially for pregnant females and juveniles) or other destinations still unknown. If this movement is, in fact, triggered by lack of prey and there is another area nearby where prey resources may be sufficient, the whales may at least investigate that region briefly on their way out of the Gulf of Maine. If right whales feed little, or even fast completely for prolonged periods during the winter, it would make adaptive sense for them to stay in that area as long as prey resources remain sufficient.

All of the known high-use feeding areas for right whales have geological features which appear to favor concentration of plankton, especially calanoid copepods, through interactions with hydrographic conditions (Mayo and Marx 1990, Kraus and Kenney 1991, Kenney *et al.* 1995). The topography of Jeffreys Ledge, and the counter-clockwise current throughout the Gulf of Maine influences the oceanography of the Ledge (Apollonio 1979), placing this area in the same broad category.

We do not know on what prey right whales feed while on Jeffreys Ledge. In other habitats North Atlantic right whales feed primarily on copepods, especially *Calanus finmarchicus* (Kenney *et al.* 1985, 1986; Murison and Gaskin 1989; Kenney and Wishner 1995), with some variation when other species are abundant (including *Pseudocalanus minutus, Centropages* spp., or larval barnacles; Mayo and Marx 1990). Copepod productivity in the Gulf of Maine is highest in spring and decreases during summer and fall (Apollonio 1979), so

the time that right whales are on Jeffreys Ledge should be that of lowest copepod availability. It is possible that the oceanographic features of Jeffreys Ledge aggregate available copepods into levels which attracts right whales. There is, however, an alternate source of prey which right whales may also use which is uniquely present on Jeffreys Ledge during this time. During the fall, Jeffreys Ledge is the largest spawning ground for the Gulf of Maine herring (*Clupea harengus*) stock (Boyar *et al.* 1973, Cooper *et al.* 1975, Sinclair and Tremblay 1984). Herring eggs hatch into 5–7-mm planktonic larvae after 1–3 wk, grow approximately 2 mm/mo until the following spring, and are generally retained within the area of hatching for at least several months (Iles and Sinclair 1982, Townshend *et al.* 1989). While there are no records of herring larvae density which approach the levels of 1,000/m^3 found as a feeding threshold by Mayo and Marx (1990), few actual measurements have been made.[2] Our understanding of the feeding ecology of right whales on Jeffreys Ledge, therefore, might benefit from more intensive studies of habitat use and prey.

Jeffreys Ledge may be an important fall feeding area for right whales and an important nursery area during summer. The presence of considerable concentrations of whales during fall, sighted over several years despite very low observer effort, and the indication of some extended whale residencies appears to indicate a habitat which plays an important role in the annual cycle of this population. More dedicated surveys during the fall and early winter and studies of the physical and oceanographic characteristics of the area itself would provide more insight into the importance of Jeffreys Ledge as habitat for right whales in the Western North Atlantic.

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[2] Personal communication from Mark H. Tupper, School of Marine Sciences, University of Maine, Orono, ME 04469, March 1998.

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BEHAVIOR OF A HUMPBACK WHALE (*MEGAPTERA NOVAEANGLIAE*) UPON ENTANGLEMENT IN A GILL NET

Entangled baleen whales have been observed swimming with gear on them, and have been found dead with either fishing gear or scars on them which suggest that entanglement may have been a factor contributing to their mortality (Hare and Mead 1987, Heyning and Lewis 1990, Mazzuca *et al.* 1998). Scars observed to be created from entanglements have been used to infer entanglement rates (Kraus 1990, Kenney and Kraus 1993) which, along with direct observations of carcasses in gear, have led to the belief that fishing gear entanglements are one of the most significant threats to whales today (Perrin *et al.* 1994). In Newfoundland, Canada, humpback whale entrapments in cod fishing traps have been a major management issue since the mid-1970s (Perkins and Beamish 1979, Lien 1989). Little is known, however, about the functional nature of entanglements of whales: how and when whales entangle, in what type of fishing gear they entangle, and whether the gear is actively fishing or has been lost at sea ("ghost gear"). Lien *et al.* (1990) indicated that entanglements in Newfoundland cod traps were more likely to happen at night and were more likely within 24 h of initially setting the fishing gear.

On 15 April 1986 three observers from the Cetacean Research Unit undertook a day-long photoidentification survey of humpback whales on northern Stellwagen Bank, some 21 km southeast of Gloucester, Massachusetts, aboard a 6.7-m research vessel. Approximately 30–40 humpback whales were in an area of approximately two square nautical miles. Many of the whales appeared in an active state, with generally short (one- to three-minute) dives, two to four respirations per surfacing, and rapid swimming, although component movement was minimal. Their behavior, combined with apparent bait traces detected in the lower portion of the 50–55 m water column on our 50 kHz echosounder, led us to believe the whales were feeding below the surface. Occasional aerial behaviors (breaching, lob-tailing, and flippering) were observed sporadically in the area, although not from our focal animals. Sea conditions were calm with a swell of less than 1 m and no wind. Numerous "high-flyers" (surface markers for bottom-set gill nets) were in the area.

At 1638 we approached and initiated observations on a juvenile humpback, later matched to a whale first photographed as a calf in May 1985 on Stellwagen Bank (referred to as whale # 603). After a dive of 120 sec it calmly surfaced approximately 50 m away from our vessel. While initially photographing its dorsal fin and tail flukes from 25 to 30 m, we saw no fishing gear on the animal.

The first observed surfacing was followed by a dive of 153 sec. When the whale reappeared, it initially surged to the surface at an oblique angle, clearing the water to its flippers and landing with a chin slap. It immediately started rolling 360 degrees and became increasingly agitated. In the two minutes

following surfacing, the whale rolled seven times, trumpeted (creating a loud wheezing sound audible above the surface during exhalation; Watkins 1967) four times, and belly-up lobtailed twice. During the lob-tails, it became apparent that the whale was tangled in a considerable amount of gill net gear (both polypropylene "lead" line with its embedded floats and thinner gill net mesh attached to the lead line). It was unable to fully straighten its caudal peduncle because of the constraints of the gear. Between two and four minutes after surfacing, the whale again thrashed and trumpeted repeatedly. Four minutes into the surfacing, the whale started to open its mouth and shake its head vigorously from side to side. At this point we saw that the fishing gear also went through its mouth, essentially "bridling" the animal, leading into at least two full wraps of the line and mesh around its body. The mouth-open, head-shaking behavior was repeated seven times in the four minutes following the first display of the behavior, then not repeated until an hour later.

While the mouth-open head shaking continued for only a few minutes, the animal thrashed extensively for 34 min after surfacing. The effect of this was a continual shifting of the lines around the animal. It succeeded in freeing its tail stock but ended up with the wrapped gear farther forward on its back. A blue lead line float was now visible in the midline of the back halfway between the dorsal fin and blowholes. While not confirmed, we also believe that one, if not both, flippers were pinned to the body, as they were not observed to move from the side of the body throughout the observation (something we normally see in the course of humpback whale swimming). Gear trailed at least 15 m behind the animal on both sides, at which point we could no longer see the lead line due to lack of water clarity. The animal also continued trumpeting frequently; of the 107 respirations in the 34 min following the initial surfacing, 86.9% (93) were trumpets.

After 34 min the animal appeared to calm and entered a placid state for 12 min. While trumpets were still common, they represented only 47.8% (11 of 23) of the respirations during that period. From 46 to 81 min following surfacing, the whale would remain placid for 60–120 sec, then thrash for 15–20 sec. Trumpets were frequent, and the mouth-open head shaking again became common (being displayed 21 times in the last 11 min). At the 81-min mark, we terminated the observation due to loss of daylight with the whale continuing this activity. During the first 70 min the whale did not show any significant vector movement; in the last ten min it started moving south at an estimated speed of 0.5–1 knot. The animal never dove following its entanglement.

The whale was alone for the great majority of the observation. During the first 20 min after its entanglement, the concentration of whales in the area dispersed significantly. At the 33-min mark, three humpback whales (file animals Clipper, female, estimated birth in 1981; Alphorn, male, born 1983; and Ember, male, born 1982) rapidly approached the entangled animal. For the next 20 min they remained within 100 m of the stricken animal when they surfaced, although their surface time was minimal. All three animals

were obviously excited, trumpeting consistently and swimming rapidly at the surface.

We believe that the whale entangled in an actively fishing gill net rather than in ghost gear. There was a gill net marker within 100 m of the whale when it dove prior to resurfacing with the gear. Since the marker was visible after the surfacing but did not noticeably move during the incident, we believe the whale tore a portion of the net free. Prior to the entanglement, we saw no fishing gear on the animal, and its behavior was similar to that of other whales in the area. We believe that the whale went into the gear while subsurface feeding, since the netting clearly ran through the mouth and was apparently lodged in its baleen. Such subsurface and near-bottom feeding is not unusual for juvenile whales on Stellwagen Bank (Hain *et al.* 1995).

The thrashing response of the entangled animal, while potentially an instinctive response to the contact, was ineffectual. The whale succeeded in freeing its tail flukes and caudal peduncle to allow full movement but also appeared to further entangle its body. The initial thrashing response is similar to that documented in a California sea lion (*Zalophus californius*, Feldkamp 1985) and harbor porpoises (*Phocoena phocoena*, Kastelein *et al.* 1995), which was equally ineffectual. The response also bears some resemblance to an extreme response to biopsy darting described by Weinrich *et al.* (1992). In that case the animal responded initially by trumpeting, charging, and thrashing but appeared to exhaust itself and entered a placid resting state shortly thereafter. Both the overall number and frequency of trumpets indicate that the animal was extremely disturbed or agitated, as trumpets are thought to be indicative of a disturbance or a stress response (Watkins and Wartzok 1985, Weinrich *et al.* 1992).

While we were not able to record any subsurface acoustic signals, it is possible that the entangled animal was vocalizing extensively, resulting in the approach of the other three humpbacks. If nothing else, the trumpet blows that we heard have an underwater acoustic component (Watkins 1967), and unusually extensive subsurface vocalizations, especially moans, have been recorded from other entangled humpback whales (Winn *et al.* 1979). Similar conspecific approaches were also seen in those cases. The approach of conspecifics to calls of non-entangled whales recorded on their feeding grounds has been documented previously (Mobley *et al.* 1988). However, we saw nothing which would indicate helping or care-giving behavior on the part of the other whales, which left the area after approximately 20 min.

While we do not know conclusively whether the whale survived its entanglement, we have not resighted the whale since that day. Spring is a time when many rarely sighted and perhaps migratory whales are photographed (unpublished data), and whale # 603 had only been seen twice before in the area (including a sighting the day before it entangled).

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MASON WEINRICH, Cetacean Research Unit, P.O. Box 159, Gloucester, Massachusetts 01930, U.S.A.; e-mail: mtw@shore.net. Received 24 February 1998. Accepted 28 May 1998.

A shift in distribution of humpback whales, *Megaptera novaeangliae*, in response to prey in the southern Gulf of Maine

Mason Weinrich
Malcolm Martin*
Rachel Griffiths
Jennifer Bove
Mark Schilling

Cetacean Research Unit, PO Box 159
Gloucester, Massachusetts 01930
*Present address: Department of Biology
Rutgers University, Brunswick, New Jersey
E-mail address (for M. Weinrich): mason@cetacean.org

Abstract.—From the mid-1970's to the mid-80's, Stellwagen Bank was an important humpback whale feeding area with sand lance (*Ammodytes* spp.) as the major prey. Between 1988 and 1994, however, the number of humpback whales we identified each year on Stellwagen declined from a high of 258 (1990) to 7 (1994), and the mean number of whales identified per day fell from 17.7 (1988) to 0.9 (1994). Adult whales decreased steadily after 1988; juveniles decreased rapidly after 1991. Echo-sounder data from Stellwagen showed that prey trace levels declined from 19.1% of the vertical water column in 1990 to 2.8% in 1992 (no readings were taken in 1988–89, or 1993–94). Simultaneously, the number of whales identified on Jeffreys Ledge, north of Stellwagen Bank, increased dramatically beginning in 1992. Sixty-four percent of the whales identified on Jeffreys in 1992–94 were seen on Stellwagen Bank in 1988 and 1989. We hypothesize that humpback whales shift their distribution in order to prey upon recovering herring populations, their primary source of food.

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Humpback whales, *Megaptera novaeangliae*, migrate seasonally between low-latitude breeding grounds and high-latitude feeding areas (Kellogg, 1929; Mackintosh, 1965; Katona, 1986). In the western North Atlantic, whales that winter in Caribbean waters migrate to feeding grounds in New England (the Gulf of Maine), in the Gulf of St. Lawrence, and in waters off Newfoundland, Greenland, Iceland, and Norway (Katona and Beard, 1990). The whales using each feeding area appear to consist of extended matrilines (Baker et al., 1990; Clapham et al., 1992). Within feeding areas, prey distribution has been a primary influence on the local distribution and micromovements of all baleen whales examined to date (Whitehead and Carscadden, 1985; Payne et al., 1986, 1990; Piatt et al., 1989).

Studies of humpback whale movement, ecology, demography, behavior, and social organization on their feeding grounds in the Gulf of Maine have been ongoing since the mid-1970's, (Payne et al., 1986; Clapham and Mayo, 1987, 1990; Weinrich, 1991; Weinrich and Kuhlberg, 1991; Clapham et al., 1992; Weinrich et al., 1992; Katona et al.[1]). During this period, several shifts in the distribution of humpback whales have been reported. Payne et al. (1986) showed that humpback whales in the late 1970's had moved from primary abundance on Georges Bank and in the waters of the northern Gulf of Maine to the inshore southwestern Gulf of Maine, especially Stellwagen Bank and the Great South Channel. They attributed this shift to a fishery-induced collapse of herring (*Clupea harengus*) populations (Anthony and Waring, 1980; Grosslein et al., 1980) and a corresponding increase in sand lance (*Ammodytes* spp.) (Meyer et al., 1979; Sherman et al., 1981, 1988; Sherman 1986; Sissenwine 1986). Both species are known prey for humpback whales (Mitchell, 1973; Overholtz and Nicholas, 1979; Kawamura, 1980). These fish species are potential ecological competitors (Reay, 1970; Meyer et al., 1979; Sherman et al., 1981); moreover, herring are known predators of

[1] Katona, S. K., P. Harcourt, J. S. Perkins, and S. D. Kraus. 1980. Humpback whales: a catalog of individuals identified by fluke photographs. College of the Atlantic, Bar Harbor, ME, var. pagination.

sand lance (Fogarty et al., 1991). Sightings of humpback whales off the Maine coast, where herring were the primary whale prey, decreased dramatically during the late 1970's (Payne et al., 1986; Mullane and Rivers[2]). Sand lance frequently use shallow areas with sandy bottoms, such as Stellwagen Bank in the southern Gulf of Maine (Meyer et al., 1979). This shift in distribution, and corresponding change in primary prey type, may have also led to changes in feeding behavior (Weinrich et al., 1992). Humpback whales remained abundant in the southwestern Gulf of Maine throughout the 1980's, with a brief decrease in some areas during 1986–87 (Payne et al., 1990; Cetacean Res. Unit[3]).

We documented a gradual but continuous decrease in the use of Stellwagen Bank by humpback whales during 1988–94. Our data suggest that whales have returned to a distribution similar to that documented until the late 1970's. We hypothesize that this return is due to the recovery of herring stocks in the Gulf of Maine and to a corresponding decrease in available prey for humpback whales on Stellwagen Bank and in other areas favored by sand lance in the southwestern Gulf of Maine.

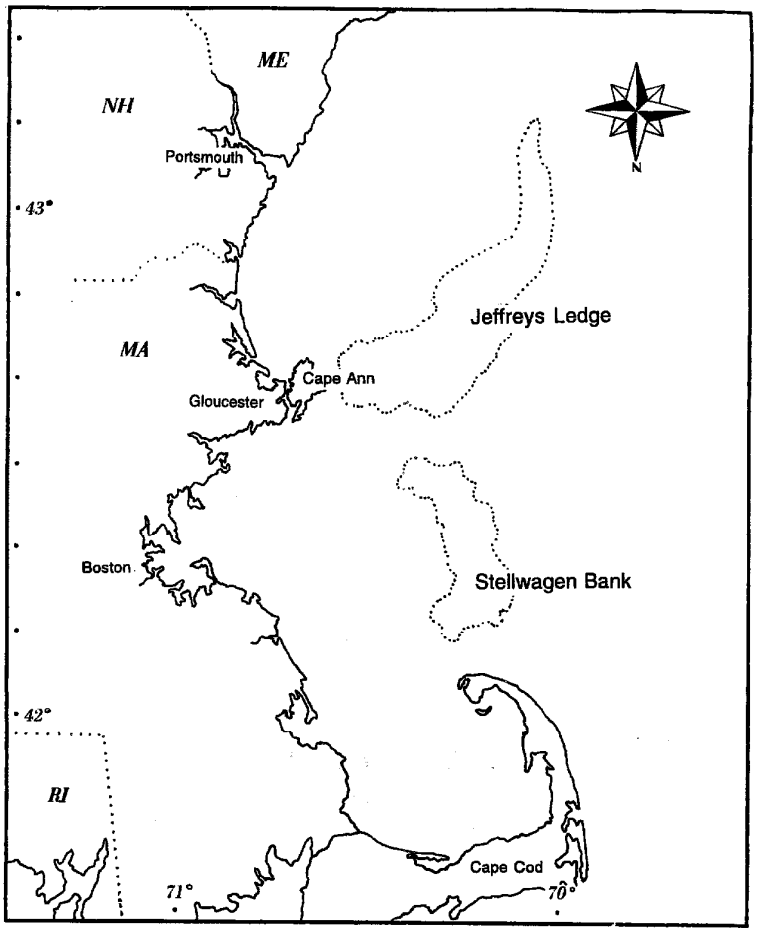

Figure 1
The study area in the Gulf of Maine.

Methods

Survey methods

From 1 May to 30 October, 1988 to 1994, daily shipboard surveys were carried out aboard commercial whale-watching boats. These departed from Gloucester and Boston, Massachusetts, and were typically 4–5 hours in duration. There were usually two cruises per vessel per day. A typical cruise included 90–120 minutes in areas where whales were often observed, as well as 2–3 hours of transit time. Whale watches usually emphasized the northern half of Stellwagen Bank. On occasion, whale watches surveyed the southern half of Jeffreys Ledge to the northeast of Cape Ann (Fig. 1). This effort is detailed in Table 1. Within each whale-watching trip, protocol and typical amount of observation time were consistent on all vessels.

Whale-watching cruises were supplemented by occasional day-long (7–13 h) excursions on research vessels. These took place 1 April to 15 November of each year, with emphasis on April and October–November, as well as during periods of significant whale concentration from May to September. During each cruise, a specific attempt was made to conduct a comprehensive photo-identification survey of a specific area (i.e. northern Stellwagen Bank, southern Jeffreys Ledge, etc.). As time allowed, coverage was devoted to a larger portion of the entire geographic feature (either Stellwagen Bank or Jeffreys Ledge). Specific areas were determined by recent sightings of whale aggregations, reliable reports of whale sightings from local boaters, or a determination that an area had not been recently surveyed. Jeffreys

[2] Mullane, S. J., and A. Rivers. 1982. Mt. Desert Rock, Maine. Annual Report, 27 p. [Available from Allied Whale, College of the Atlantic, Bar Harbor, ME.]

[3] Cetacean Research Unit. 1980–89. Cetacean Research Unit, PO Box 159, Gloucester MA 01930. Unpubl. data.

Table 1

Study effort by both number of survey days and number of survey trips for both Stellwagen Bank and Jeffreys Ledge. "JLSN days" represent the total number of survey days represented by the Jeffreys Ledge Sighting Network (JLSN), established after the 1992 season (see text for further details).

Year	Stellwagen days	Stellwagen trips	Jeffreys days	Jeffreys trips	JLSN days
1988	145	558	16	44	0
1989	151	550	17	20	0
1990	166	516	32	37	0
1991	160	460	31	36	0
1992	171	506	34	37	69
1993	106	364	48	79	119
1994	86	141	86	141	138

Ledge was the destination for just under half of the dedicated cruises from 1988 to 1992, all but four in 1993, and all but two in 1994.

Beginning in 1990, sighting and photo-identification data were also collected from a whale-watching boat operating out of Kennebunk, Maine, to obtain information from the northern end of Jeffreys Ledge. Observer coverage was for one trip per day, 3–5 days per week. Because of the unusually large number of whales first observed on our dedicated cruises to Jeffreys Ledge in 1992, a photo-identification network (consisting of three whale-watching boats working on Jeffreys Ledge for one trip per day) was formalized in fall 1992 (after the completion of field efforts), and existing 1992 data were obtained. Beginning in 1993, data collection from these vessels was standardized to be directly comparable with Stellwagen Bank whale-watching data. Because 1993 represented the first year in which Jeffreys Ledge data were collected in any kind of standardized fashion, occurrence and occupancy (defined below) were not calculated for Jeffreys Ledge humpback whale sightings.

Study areas

Stellwagen Bank, now a National Marine Sanctuary, is a sandy glacial deposit approximately 32 km long with depths from 18 to 37 m (Fig. 1). It borders the eastern margin of Massachusetts Bay and is located approximately halfway between Cape Ann and Cape Cod, Massachusetts. Jeffreys Ledge is a more complex, winding, shallow ledge, with typical depths of 45 to 61 m and with a length of approximately 54 km. Its substrate is a mixture of rocky and muddy bottoms. The southern edge of Jeffreys Ledge is 9 km northeast of Rockport, Massachusetts, whereas the northern end lies 36 km east of York, Maine. Stellwagen Bank and Jeffreys Ledge are separated by 21.6 km at their closest point.

Field methods

Individual humpback whales were identified from photographs of distinctive pigment patterns on the ventral surface of their tail flukes or from the shape of and scarring on the dorsal fin (or by both features) (Katona and Whitehead, 1981). Two observers collected data on each whale or group of whales. One observer was responsible for photographing each whale, while the second recorded the whale's location (by means of LORAN-C), group affiliations, and behavior. This observer also recorded which photographs were taken of each whale, as dictated by the photographer. Each group of whales in an area was usually observed for 1–30 minutes; most, if not all, whales in a single location (3–5 km radius) were identified during each observation period. Field methods were consistent on all vessels.

Age class and sex determination

Individuals were identified by comparing photographs with those of a catalog of humpback whales maintained at the Cetacean Research Unit (CRU), Gloucester, MA. Details on cataloging methods and contents of the catalog were given in Weinrich (1991), Weinrich and Kuhlberg (1991), and Weinrich et al. (1992) and are based on procedures outlined by Katona and Whitehead (1981). Whales were sexed by photographing them while belly up at the surface (and by noting the presence or absence of a small lobe immediately posterior to the genital slit [Glockner, 1983]), by observing a female with calf, or by using molecular techniques (Baker et al., 1991). Individuals were assigned to age classes (juvenile or adult) based on known age (first observation as a calf) or based on the consensus among all experienced CRU observers of an animal's relative size at first sighting. The accuracy of the latter technique was confirmed by estimating the age class of animals of unknown identity in the field and by finding that these estimates matched (photographically) animals of known age. No incorrect classifications were made (n=51). For the purposes of this paper, an animal was classified as an adult if it was known to be at least five years old, an age at which 50% or more of the population is mature (Chittleborough, 1965; Clapham and Mayo, 1990).

Prey density

In 1990–92, a SITEX HE-358 50-kHz echo-sounder and chart recorder aboard a whale-watching vessel

were used to record prey density on Stellwagen Bank in the immediate area where whales had been observed. The echo-sounder was used for 83 days during 1990 (9 May to 20 October; 153 total hours), 98 days during 1991 (9 May to 28 September; 221 total hours), and 69 days during 1992 (24 April to 24 October; 60 total hours). Clear readings throughout the water column (i.e. with no interference present) were obtained for 69 hours in 1990, 166 hours in 1991, and 60 hours in 1992. An echo-sounder operating at this frequency is likely to detect the presence of fish but unlikely to detect plankton unless it is present in extreme densities (Dolphin[4]). The echo-sounder was started as the boat slowed to begin whale observations and turned off when the vessel left the observation area to return to port. Because echo-sounder tracings were obscured by noise when the vessel was moving at cruising speed (e.g. moving from one group of whales to the next), tracings performed at cruising speed were eliminated from analysis. A timing mark was placed simultaneously on both the echo-sounder chart and the data sheets by the second observer at 10-min intervals.

The echo-sounder chart was later sampled at 2-min intervals by interpolating between the 10-min marks. For each sampling point, prey presence was scored visually in 3.3 m (10 ft) vertical increments from the surface to the bottom, with a sliding score of zero (for no prey) to 10 (prey throughout that 3.3 m interval). From these readings mean values for vertical bait density were calculated for each quarter of the water column and the total water column. Mean depth in which readings were taken was 38.4 m (SD=15.1 m). No echo-sounder data were recorded on Jeffreys Ledge.

Although such data give an idea of the availability of prey in the immediate vicinity of whales, they do not reflect an area where whales were not present. Hence, there could have been very similar or different prey concentrations very nearby, without that information ever being recorded. However, since each year's data set came from numerous days and contained data points from several different locations (albeit within a 3–4 mile radius) within each day's observations, we feel they at least give a crude overview to overall prey densities in the vicinity of whales.

Data management and analysis

Both daily whale sighting data and prey density data were stored in PC-based computer files and analyzed with commercially available statistical software (SPSS/PC+, Kinnear and Gray, 1992). For daily sighting data, an Xbase program was written to isolate the sightings of each whale and to calculate statistics summarizing that individual's within-year sighting history (including occurrence and occupancy—see below) in each part of the study area. These values were then stored in a separate data file and analyzed with the same statistical software. Temporal trends were analyzed with least-squares regression (Snedecor and Cochran, 1967) of individual data points with the year of observation as the independent variable, although only annual means are presented in our tables for occurrence and occupancy scores. The slope of the regression line (B) and the probability value (P) from a test of the null hypothesis that the slope did not differ from zero are presented for each test. Calves were eliminated from these analyses because we assumed that a calf is merely following the mother in her choice of habitat.

Definitions

"Occurrence" is defined as the number of days on which an individual whale was photographed in a single year. "Occupancy" is the number of days elapsed from the first to the last recorded sighting of an individual whale within a year. These definitions are consistent with those used by Clapham et al. (1992).

Results

Stellwagen Bank

Total number of humpback whales identified per year The number of humpback whales identified in any single year on Stellwagen Bank ranged from 258 (1990) to a low of 7 (1994), with a mean of 153.6 (SD=88.4) (Fig. 2). These values show a statistically significant declining trend (B=–32.82, P=0.033).

When the total number of whales was broken into age class, differences in annual trends were apparent. Numbers of adult whales identified on Stellwagen ranged from 173 (1990) to 3 (1994; mean= 102.8, SD=60.4). These values also showed a statistically significant declining trend (B=–0.84, P=0.018). Number of juveniles identified in each year varied from 85 (1990) to 4 (1994; mean=50.71, SD=29.2). These also showed a downward trend, although not statistically significant (B=–23.50, P=0.099). The ratio of identified adult whales to identified juveniles varied from 2.5:1 (in 1988) to 0.75:1 (in 1994). Numbers of cow-calf pairs throughout the study period

[4] Dolphin, W. F. 1994. Department of Biomechanical Engineering, Boston University, Boston, MA 02215. Personal commun.

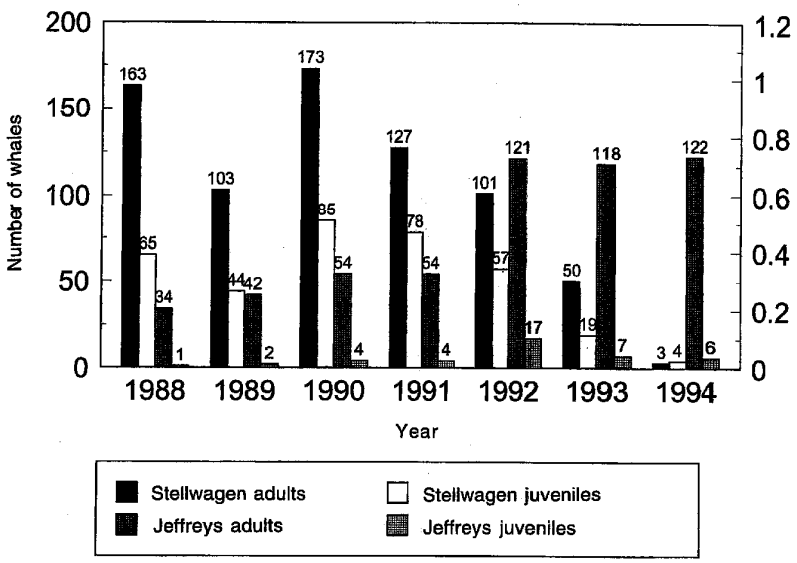

Figure 2

The number of individual humpback whale adults and juveniles identified per year on Stellwagen Bank and Jeffreys Ledge, 1988–94. Note the rapid annual decrease of adults on Stellwagen Bank starting in 1991, and the corresponding increase on Jeffreys Ledge beginning in 1992. Juveniles started a rapid decrease on Stellwagen Bank in 1992.

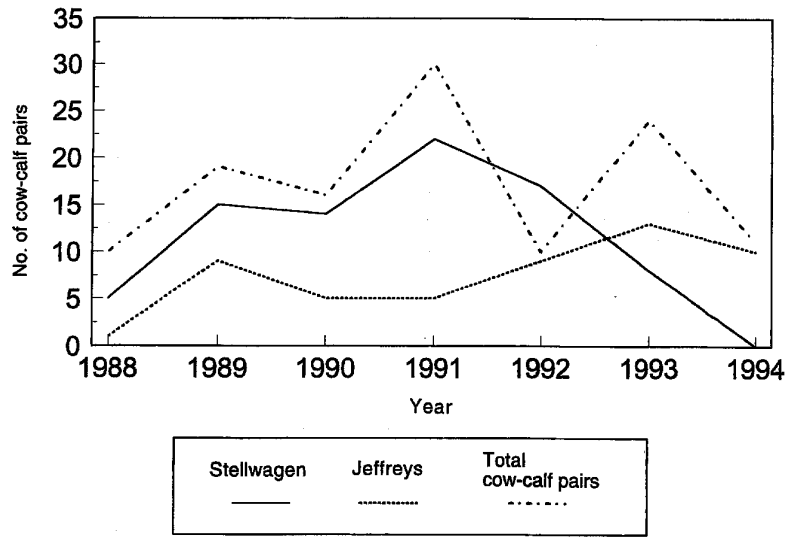

Figure 3

The number of cow-calf pairs on Stellwagen Bank, Jeffreys Ledge, and in the entire Gulf of Maine, 1988–94. The percentage of known mother-calf pairs that were sighted on Stellwagen began to decrease dramatically in 1992, the same year that the percentage mother-calf pairs began to increase on Jeffreys Ledge.

showed no significant trend in the absolute number seen on Stellwagen (B=–1.214, P= 0.424). Numbers of cows and calves began in 1991 to decline sharply, especially when compared with the total number of cow-calf pairs in the Gulf of Maine. By the last year of the study no cow-calf pairs were seen (Fig. 3).

Occurrence and occupancy

Mean occurrence of humpback whales on Stellwagen Bank within a single season ranged from 13.1 days (1989, n=147) to 6.6 days (1993, n=69) (Table 2; B=–0.30, P=0.501). Adults showed a within-year mean occurrence of 6.4 days (SD=4.8, n=720), with a statistically significant declining trend through the study period (B=–1.98, P<0.001). Compared with adults, juveniles showed a higher mean within-year occurrence (mean= 14.5 days, SD = 4.2, n=352), which significantly increased throughout the study period (B=1.63, P=0.030).

Occupancy of individual whales within years declined significantly from a mean of 61.8 days (1989, n=147) to 21.6 days (1994, n=7) (Table 3; B=–7.07, P=0.002). Again, age classes showed different trends. Adults had a mean occupancy period of 39.3 days (SD = 23.56, n=720) throughout the study period, with a significant declining trend (B=–10.65, P<0.001). In contrast, juveniles had a mean occupancy period of 55.0 days (SD=13.21, n=352), with no significant trend apparent (B=–2.82, P=0.296).

Although juveniles showed no significant trend in occupancy and had occurrence values that actually increased throughout the period, a comparison of median values for

Table 2
The mean occurrence (in days) of humpback whales on Stellwagen Bank, 1988–94.

Year	Adults	Juveniles	Combined total
1988	13.5	7.2	11.2
1989	12.2	15.2	13.1
1990	7.9	12.5	9.6
1991	6.2	17.0	10.7
1992	7.2	19.6	12.0
1993	3.1	15.7	6.6
1994	1.3	19.8	11.9

Table 3
The mean occupancy (in days) of humpback whales on Stellwagen Bank, 1988–94.

Year	Adults	Juveniles	Combined total
1988	67.9	47.1	60.4
1989	56.5	71.6	61.8
1990	52.3	55.0	51.8
1991	47.5	73.1	54.6
1992	32.4	53.3	42.2
1993	17.2	48.4	25.7
1994	1.3	36.8	21.6

each of these variables portrays a trend more similar to that seen from adults. From 1992 through 1994, prolonged residency of a few juveniles skewed occurrence and occupancy values. During 1991–93, median occurrence of juveniles fell from seven days to three, whereas median occupancy periods fell sharply, from 59.5 days to 15 days. In 1994, so few juveniles were seen (four) that the relatively high values of two individuals severely skewed the results for that year. Median values of adult occurrence and occupancy showed the same trends as those portrayed from the regression analyses.

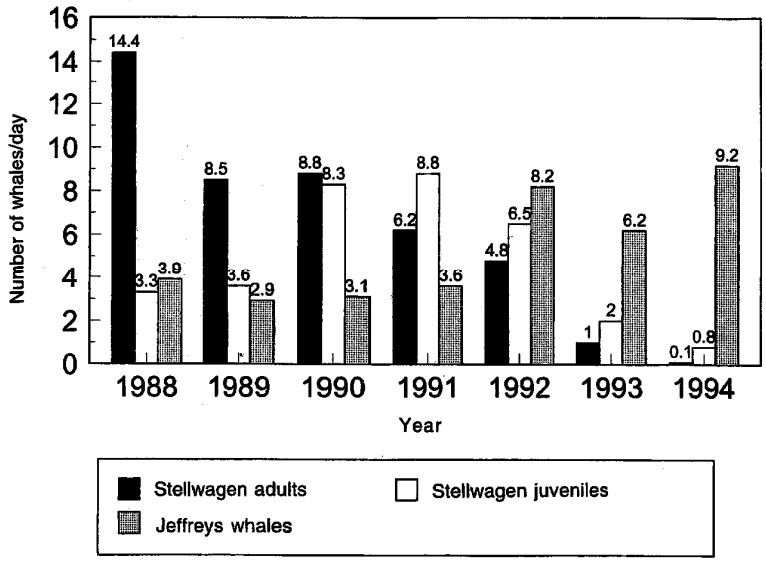

Figure 4
The mean number of whales identified per day in each age class and year on Stellwagen Bank and Jeffreys Ledge, 1988–94. Jeffreys Ledge juveniles were not included because of their low numbers. Note the rapid decrease among adults on Stellwagen Bank beginning after 1988, and the decrease among juveniles on Stellwagen beginning in 1992. Jeffreys Ledge values were highest in the final three years, after the general decrease on Stellwagen Bank.

Number of whales per day

One of the clearest indicators of habitat use is the number of identified humpback whales sighted on Stellwagen Bank each day. This measure incorporates two of the above components—the number of whales identified as well as how often they were sighted in the area. Throughout the study period, a mean of 12.7 (SD=11.31, n=1,072) whales were identified per day, ranging from an annual high of 17.7 (SD= 15.30, n=153 days) in 1988 to a low of 0.9 (SD=0.76, n=97 days) in 1994 (Fig. 4). Adults and juveniles again showed different trends. Adults per day declined steadily from 14.4 in 1988 to 0.1 in 1994 (B=–2.21, P<0.001), whereas juveniles showed no clear trend, with a high of 8.8 in 1991 and a low of 0.8 in 1994 (B=–0.44, P=0.501). Juvenile values showed a clear peak in 1990–91 as compared with other years (Fig. 4).

Vertical prey density Mean overall vertical prey density decreased from 19.1% with prey traces in 1990 to 2.8% with prey traces in 1992 (B=–0.38, P<0.001) (Table 4). Similar significant decreases were seen in each vertical quarter of the water column (Table 4).

Although it was impossible to determine prey type from traces alone, catches of groundfish (mainly Atlantic cod [*Gadus morhua*] and haddock [*Melanogrammus aeglefinus*]), and bluefish (*Pomatomus saltatrix*) in the immediate area of trace recordings

Table 4
Percentage of the water column with echo-sounder prey traces by year in each quarter. Mean depth was 38.4 meters.

	Quarter of the water column				
Year	Top 25%	2nd 25%	3rd 25%	4th 25%	Total
1990	17.2%	15.0%	16.8%	24.3%	19.1%
1991	3.1%	4.5%	7.3%	12.7%	7.9%
1992	1.4%	0.3%	0.8%	1.1%	2.8%

by party-fishing boats indicated that sand lance were the predominant fish prey in stomach contents of humpback whales; some small mackerel (*Scomber scombrus*) and herring were also observed in stomachs in much lower frequencies. Herring were more prominent in October during each field season, when only a small number of echo-sounder data points were recorded.

Jeffreys Ledge

Total number of humpback whales identified The number of humpback whales we identified on Jeffreys Ledge increased from a low of 35 (in 1988) to a high of 138 (in 1992) (B=19.57, P=0.004; Fig. 2). Although there was a generally increasing trend, there was a sudden increase from 58 in 1991 to 138 in 1992.

The increase among adult whales also showed a significant increase across years (B=17.25, P=0.003). Although juveniles increased steadily throughout the period, and suddenly from 1991 to 1992, they did not do so at a significant rate (B=1.357, P=0.201). (The same analysis without 1992 data, where there were an unusually high number of juveniles, does show a statistically significant increasing trend among juveniles [B=0.914, P=0.006]). Cow-calf pairs also showed a significantly increasing trend (B=1.429, P=0.049).

In each year, identified humpback whales on Jeffreys Ledge were biased toward adults. No more than 17 juveniles were photographed on Jeffreys Ledge in any year, and the number of juveniles photographed exceeded 10 in only a single season (1992). The ratio of adult to juvenile whales ranged from a high of 34.0:1 in 1988 to 7.1:1 in 1992, higher in all cases than the adult:juvenile ratios on Stellwagen Bank.

Number of whales per day The mean number of whales per day ranged from a low of 2.9 (SD=1.9, n=22) in 1989 to a high of 9.2 (SD=7.7, n=138) in 1994 (Fig. 4; B=0.98, P=0.022). In 1993 and 1994, the only years with coverage comparable to Stellwagen Bank levels, means of 6.2 (SD=6.9, n=116) and 9.2 (SD=7.7, n=138) whales were identified on each day of coverage, respectively.

The pattern of humpback abundance on Jeffreys Ledge showed surprising seasonal consistency throughout the study. Sightings were sporadic during May, June, and early July, with few, if any, concentrations of whales observed. In all years, concentrations increased from late July through September, with whales still abundant in three of the seven Octobers observed (1988, 1989, 1993).

Identification comparison To determine whether the whales using Jeffreys Ledge were the same as those previously inhabiting Stellwagen Bank, we examined how many of the 210 humpback whales identified on Jeffreys Ledge in 1992–94 had been previously sighted on Stellwagen Bank. Of this group, 123 (58.5%) were photographed on Stellwagen Bank during 1988–89. When the 17 animals that had not yet been born in 1988–89 were also discounted from the Jeffreys population, 63.7% of all animals were found to have been seen previously on Stellwagen. By comparison, only 35 (16.6%) of the Jeffreys Ledge whales were also seen on Stellwagen Bank during the 1992–93 period, or 16.6% of the total Jeffreys Ledge population.

Discussion

Humpback whales, especially adult and cow-calf pairs, decreased their use of Stellwagen Bank drastically between 1988 and 1994. The decreased use is reflected in decreased numbers of whales identified, decreased numbers of whales (regardless of age class) per day, and decreased adult occurrence and occupancy. The decline led to a virtual abandonment in 1994, when only seven humpback whales were seen on Stellwagen, and only two of those had occupancy periods longer than ten days. The decline in whale use corresponds with a decline in the amount of echo-sounder prey traces at the sites on Stellwagen Bank where whales were found over three years during the study. Although adults showed a clear decreasing trend on Stellwagen Bank, juvenile whales showed a less clear pattern. However, even juveniles showed a rapid decrease in use from 1991 to 1994.

The increase in juvenile whales on Stellwagen Bank during 1990–91 while adult use decreased may also be a more subtle indicator of a shift in habitat quality. Previous work has shown that juvenile humpback whales are often found in areas where prey density is lower than in areas where adults predominate (Weinrich and Kuhlberg, 1991; Belt et al.[5]), and may, therefore, be considered suboptimal

habitat for the species. The vertical distribution of prey has also been reported to be different between concentration areas of the two age classes. Adults are found where prey is concentrated in the upper reaches of the water column (Belt et al.[5]) where a humpback whale's bubble and cooperative feeding strategies are most effective (Hain et al., 1982; D'Vincent et al., 1985; Weinrich et al., 1992; Weinrich et al.[6]) or where foraging is most efficient because energy expenditures associated with diving are lowest (Dolphin, 1987). Juveniles appear to concentrate more often in areas where prey are predominantly subsurface, often feeding on or near the sea floor (Swingle et al., 1993; Hain et al., 1995; Belt et al[5]; Weinrich et al.[6]). In the years where juvenile use increased while adult use decreased (1990–91), echosounder data showed that prey were most concentrated in the bottom 25% of the water column. Even within the year 1990, prey traces were found to be more common in the upper portions of the water column on days when more adult whales than juveniles were present (Belt et al.[5]).

These findings suggest that there are multiple ways of assessing habitat quality for whales. Past reports of population trends have included only the number of whales sighted per unit of effort as a guide to habitat quality (Payne et al., 1986, 1990; Piatt et al., 1989). However, indicators such as independent trends in occurrence and occupancy of individual whales, the number of individuals identified over a given time period, and even the age class of individuals, may also be important indicators of habitat quality. Although all of these measures (except the last) are factors of sightings per unit of effort, these individual components may be illuminating in detailed studies of a particular area. Prey type, for instance, could influence factors such as occurrence or occupancy (or both). In this case, a relatively nonmigratory prey species, such as sand lance (which are tied to areas of particular bottom substrate and topography) could lead to residency extremes (with whales staying in an area for prolonged periods or avoiding the area altogether), while a less habitat-restricted prey (such as herring) could lead to highly variable intraseason distribution patterns.

Although the number of whales on Stellwagen Bank showed a dramatic decrease, the number of whales photographed on Jeffreys Ledge more than doubled in the last three years of the study. The corresponding increase in observer effort during the same period no doubt had some effect on the dramatic increase in both the number of identified individuals and the mean number of whales identified per day. However, existing opportunistic data were collected following the 1992 season because of the increased use of the area suggested from our dedicated vessel surveys, where methods remained standard across years. Further, captains of whale watching boats and naturalists who had worked on Jeffreys Ledge since the mid-1980's unanimously agreed that there was a sudden, dramatic increase in daily whale sightings beginning in 1992. Therefore, we fully believe that an increase in effort is not the sole, or even the primary, cause for any increase in humpback whale numbers reported beginning in 1992.

Our data show that the sudden increase in humpback whale abundance on Jeffreys Ledge was primarily the result of whales seen on Stellwagen Bank earlier in the study relocating for much or all of their summer feeding season. What is perhaps more surprising is the relatively small number of whales that appeared in both areas during 1992 and 1993, despite the relative nearness of these areas to each other. Most of those whales photographed in both areas were seen on Stellwagen Bank for a brief period in October 1993, when herring stocks are known to migrate through the area (Fogarty and Clark[7]).

The consistent timing of whale aggregations on Jeffreys Ledge in each year (starting in early summer) corresponds with both the major influx of herring onto the Ledge and the start of their spawning season (USDC, 1991; Fogarty and Clark[7]). The biomass of the Georges Bank herring population (of which this is a segment—Stephenson and Kornfeld, 1990; Fogarty and Clark[7]) has increased dramatically over the past decade and, by 1991, was comparable to that of its pre-exploitation size (Stephenson and Kornfeld, 1990; Sherman, 1992; NMFS[8]). Echo-sounder data, observation of surface prey, and catches of local fishing boats all indicated that herring were common on Jeffreys Ledge at the same time and location as aggregations of

[5] Belt, C. R., M. T. Weinrich, and M. R. Schilling. 1991. Effects of prey density on humpback whale (*Megaptera novaeangliae*) distribution in the Southern Gulf of Maine. P. 6 *in* Abstracts of the 9th biennial conference on the biology of marine mammals. Society for Marine Mammalogy, Chicago, IL.

[6] Weinrich, M. T., C. R. Belt, M. R. Schilling, and M. E. Cappellino. 1985. Habitat use patterns as a function of age and reproductive status in humpback whales. Abstract *in* Abstracts of the 6th biennial conference on the biology of marine mammals. Society for Marine Mammalogy, Lawrence, KS.

[7] Fogarty, M. J., and S. H. Clark. 1983. Status of herring stocks in the Gulf of Maine region for 1983. Woods Hole Laboratory Reference Document 83-46, NMFS, NOAA, 33 p. [Available from Northeast Fisheries Center, Woods Hole, MA.]

[8] NMFS (National Marine Fisheries Service). 1992. Report of the thirteenth Northeast regional stock assessment workshop (13th SAW). Northeast Fisheries Science Center Document 92-02, Northeast Fisheries Center, NMFS/NOAA, Woods Hole MA. 71 p.

whales. The area is also a primary location for seine fishing for herring off New England. Herring seiners were observed fishing or transiting to or from areas of whale aggregation daily during summers 1992–94.

Although herring stocks were increasing, our data indicated that prey available for whales on Stellwagen showed a marked decrease, corresponding to a decrease in sand lance populations throughout the Northeast ecosystem (Sherman, 1992). This decrease in prey would be expected given the documented inverse relation between sand lance and herring or mackerel stocks, primarily due to direct predation (Fogarty et al., 1991). Although we cannot assign a definitive prey type to our echo-sounder traces from Stellwagen, the documented importance of sand lance as a prey for whales on Stellwagen Bank through observations of prey in the mouths of feeding whales (Hain et al., 1982; Weinrich et al., 1992), the direct observation of sand lance on Stellwagen Bank (Hain et al., 1995), prey in fish stomachs, and the lack of other suitable prey records throughout the years suggest that sand lance remained the predominant prey type for whales in that location.

We propose that humpback whales feeding in the Gulf of Maine ecosystem have shifted from their primary distribution of the mid-1970's through the late-1980's as a result of a shift in the abundance of available prey. Although we have considered only a small portion of the Gulf of Maine habitat, our findings correspond with other data from the same period. In the western side of the Great South Channel (an important area for whales from 1979 to 1991 where sand lance were the primary prey [Kenney and Winn, 1986; Payne et al., 1990]) humpback whale sightings were sporadic after July 1991 (Francis[9]; Clapham[10]; Mattila[11]). Off Mt. Desert Rock, Maine, where humpbacks were virtually absent throughout the 1980's, numbers of whale sightings increased to levels far above those of the mid-1970's (Fernald[12]). Surveys conducted in 1993 on Georges Bank by researchers from the YONAH (Years of the North Atlantic Humpback) project also sighted large numbers of humpbacks, including many animals photographed on Stellwagen Bank in previous years (Clapham[10]).

If a resurgence of herring is responsible for shifts in distribution and in primary prey type, it suggests that the distribution of humpback whales through the late 1970's and 1980's may have been a human-induced consequence. The "explosion" of sand lance in the mid- to late 1970's is thought to be primarily the result of the virtual elimination of herring due to overfishing. If this is true, we hypothesize that our observed distribution of whales from 1992 to 1994 should remain relatively stable over the course of a fairly long period because the current situation would be closer to a "natural" ecosystem.

Alternatively, fluctuations in primary prey may occur naturally, and may take place regardless of human interference. If this is true, we hypothesize that whale distributions will show fluctuations that may be cyclical. New England ground-fishermen have for years talked of regular cycles in sand lance abundance, although there are no scientific data to support this often-made contention.

Regardless of which hypothesis, if either, proves true, our data show a shift in both distribution and primary prey type for humpback whales in southern New England waters in recent years. Because this shift has been so complete, it will be interesting and illustrative to see whether, and how, other potentially prey-dependant humpback whale life history parameters, such as reproductive patterns, social behavior, and demographics of whales, all well-documented during a period of explosive sand lance abundance (Clapham and Mayo, 1990; Weinrich, 1991; Weinrich and Kuhlberg, 1991; Clapham et al., 1992), change in response to these ecosystem alterations.

[9] Francis, L. 1995. Atlantic Cetacean Research Center, PO Box 1413, Gloucester, MA 01930. Personal commun.
[10] Clapham, P. 1995. Smithsonian Institution, Washington, DC. Personal commun.
[11] Mattila, D. 1995. Center for Coastal Studies, PO Box 1036, Provincetown, MA 02657. Personal commun.
[12] Fernald, T. 1995. Allied Whale, College of the Atlantic, Bar Harbor, ME 04609. Personal commun.

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MASSCHUSETTS DIVISION OF MARINE FISHERIES
251 CAUSEWAY STREET, SUITE 400
BOSTON, MA 02114
617-626-1520
617-626-1509 FAX

PAUL DIODATI
DIRECTOR

Fax

Marine Fisheries

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Commonwealth of Massachusetts

Division of Marine Fisheries

251 Causeway Street • Suite 400
Boston, Massachusetts 02114
(617) 626-1520
fax (617) 626-1509

Paul J. Diodati
Director

October 17, 2002

Mr. Craig D. MacDonald, Ph.D., Superintendent
Stellwagen Bank National Marine Sanctuary
175 Edward Foster Rd.
Scituate, MA 02066

Dear Craig:

We offer the following comments on Sanctuary management strategies and on what issues and problems we see as management priorities for the next 5-10 years. It seems sensible for us to comment now and then to continue to advise you and your staff through our role on the Advisory Council.

We were pleased to see that fishermen took the time to attend and to participate, especially in Gloucester and Provincetown - two fishing communities that have Stellwagen Bank at their front doors. You were a first-hand witness to the fear these fishermen have that a revised Sanctuary Plan will in some way further impact their ability to fish. Amendment 13 to the Multispecies FMP has every groundfish fisherman alarmed that they may not survive the new SFA-mandated late-2003 restrictions that could include far-reaching, year-round closures of critical, nearby fishing grounds on which they depend. DMF will oppose those closures and support other alternatives.

Amendment 13 has fisheries habitat considerations as well; therefore, the Sanctuary Plan scoping hearings came at a time when nerves were frayed and tempers were high. Mistrust was and still is widespread. Fisheries managers, and now Sanctuary managers, find ourselves at the center of fishermen's attention because more needs to be done to rebuild overfished stocks and protect fisheries habitat - two responsibilities of the New England Fishery Management Council that will look to the Sanctuary for information and recommendations. Some Amendment 13 options include more Sanctuary territory in the Western Gulf of Maine year-round closure, as recommended by the Habitat Committee. This is not lost on fishermen who feel more valuable fishing grounds will be lost to protect habitat they contend doesn't need protection, such as sand and other bottom incapable of sustaining widespread, high-profile 3-D seascape serving as possible shelter and food for juvenile groundfish.

We suggest the Sanctuary Plan must emphasize regaining trust and demonstrating that Sanctuary staff are very open-minded about how to deal with the issue of impact of fishing gear on the bottom habitat. This can be accomplished by working with fishermen on collaborative research projects designed to identify sensitive bottom habitat and investigate improved fishing gear to reduce or eliminate impact in those areas. From your recent trip with me on the F/V Blue Skies you saw how nets can be designed to

allow valuable fisheries and markedly reduce net contact with the sea bed. DMF is committed to this sort of research with fishermen.

We suggest the Plan identify DMF, and fishermen, as your Sanctuary research partners with an emphasis on conservation engineering for improved habitat protection. DMF's Conservation Engineering Program is of high priority, and we have plans for significant expansion. With DMF intending to acquire more and better fishing gear-monitoring devices - like the innovative equipment you witnessed in operation - in partnership with the Sanctuary we can tackle common habitat conservation concerns.

Another way to build trust is to acknowledge in the Plan the dependence and economic importance of the Sanctuary to coastal fishing communities such as Provincetown. The Captain of the Blue Skies, Luis Ribas shared his plots of many tows he has made for groundfish and other species on Stellwagen Bank and nearby. Relatively small vessels such as his are very weather-dependent; therefore, Stellwagen is extremely important to Provincetown fishermen. The Sanctuary should convince the fishing industry that its views have at least as much weight as those wanting the Sanctuary, or a portion thereof, as a fishery or ecological reserve, or even a marine wilderness.

We emphasize that commercial fishermen should never be characterized as threats to the Sanctuary. They are part of a multiple-use approach that should involve them in research and monitoring in the best interests of improving fisheries, i.e., fishermen's own welfare, through improved habitat protection. Here's where more Sanctuary formal discussion with the New England Fishery Management Council should occur. The Council has an MPA Committee that could serve as the means for Sanctuary habitat issues to get more attention.

The Sanctuary will need many "eyes on the water," and these can be provided by fishermen (e.g., spotting whale entanglements and improper fishing gear). They can serve as Sanctuary sentinels. They know the Sanctuary and its sea bed. They know how fish move seasonally within and throughout the Sanctuary. They have shared concerns with the Sanctuary, e.g., water quality issues. Tap that knowledge, culture that relationship and confrontation will be far less likely. I may appear repetitive. I am because if I've learned nothing else during my many years as a DMF fisheries manager, I've learned that fishermen have a wealth of knowledge from years of first-hand experience and observations. They want to work with us provided we acknowledge their concerns and we try to accommodate them when and if we can.

On a related issue, we know effect of fishing gear on fisheries habitat is a new and controversial issue. It has emerged, and in a big way. DMF is paying very close attention to this issue. In fact, we have assembled some DMF draft policies on MPAs with mobile gear impact on habitat being addressed. One policy is that DMF does not classify bottom trawling and/or sea scallop dredging as destructive fishing techniques threatening Gulf of Maine marine biodiversity, although DMF does believe there are areas where trawling and sea scallop dredging are ill-advised, and other fishing gear or modified trawls/dredges should be used. Some of those areas might be within the Sanctuary, and we look to Sanctuary staff and research for insights into where those areas can be found.

This brings us to the question of whether the Sanctuary can accept impact of bottom trawling and sea scallop dredging as inevitable and acceptable consequences of catching valuable fish and shellfish and the economic value that catch produces for the

Commonwealth's seafood industry. Are there areas in the Sanctuary where trawling and dredging must be considered unacceptable and, if so, where and why?

A related issue is whether any of the New England Council's Amendment 13 proposed alternatives to minimize impact of fishing on EFH satisfy the Sanctuary's concern about protection of bottom habitat. One option would result in what appears to be a closure of almost one-half the Sanctuary thereby including a "diversity of varied habitats." Sanctuary reaction to this Amendment 13 option will send a clear message to those participating in the on-going Sanctuary Management Plan Review about where the Sanctuary is heading. Will Sanctuary staff want an Amendment 13 focus on hard, complex bottom only or will all the area in the proposed westward extension be supported? How will the Sanctuary position on these options impact the success of the next steps in Management Plan review (e.g., Action Plan development)? Just some food for thought. Also, by supporting this option that opens a large portion of the Western Gulf of Maine Closed Area, the Sanctuary will support a return of fishing to those reopened habitats. Is this what the Sanctuary wants in adjacent federal waters? This is a bit of a tricky issue with Sanctuary policy implications. Give careful thought to this one.

It has been stated that an effect of trawling is removal of significant 3-D structure in some areas important for juvenile cod shelter and food. With great attention being paid to cod, we surmise that some will believe fishing restrictions for habitat protection in the Sanctuary will hasten rebuilding of the Gulf of Maine cod stock. Sanctuary staff already has made that case although after reviewing the research serving as a basis for this conclusion, we suggest the case is not as strong as claimed. For example, analytical assumptions about differential density-dependent mortality rates and differential movement rates among habitat types drove research results. Conclusions were preordained. Moreover, the design of experiments needed to calculate mortality rates was flawed because very limited aquarium space was extrapolated to the open ocean (age zero cod subjected to an age 3 cod predator at a length equal to 60% tank width and 30% of length). Even the authors acknowledged limitations of laboratory experiments for studies of wide-ranging predators. Please don't take these comments in a wrong way. They are important experimental findings that warrant further scrutiny.

Perhaps there will be some benefit to cod rebuilding, although very difficult to quantify because one needs to compare the potential for the Sanctuary to become an important cod nursery area versus other well-documented nursery areas in the Gulf of Maine. The issue is the location of young-of-the-year (age 0) and age 1 juvenile cod in the Gulf of Maine. In particular, where are these ages in relation to the Sanctuary? Is there a shortage of GOM habitat thereby placing more importance on the Sanctuary? DMF research can provide some insights.

According to our biologists who analyzed 22 years of juvenile cod data (ages 0 and 1) collected from eastern Massachusetts' territorial waters, depths less than 90 feet inside coastal headlands of major embayments (Ipswich Bay, Massachusetts Bay, and Cape Cod Bay) offer suitable habitat for successful recruitment. Age 0 cod are up to 15 cm in length. Shoaler areas less than 60 feet are more seasonally important for settlement than deeper strata and are preferred settlement depths. These biologists concluded: "A cod nursery is located off the eastern Massachusetts coastline and within state territorial waters jurisdiction." They also concluded that based on 1963-1997 data, age 0 cod are rarely caught in the NEFSC spring offshore survey including Stellwagen Bank. Autumn

data showed similar results. All these findings are found in a DMF manuscript: "Spatial distribution of ages 0 and 1 Atlantic cod (*Gadus morhua*) off eastern Massachusetts coast, 1978-1999, relative to 'Habitat Area of Particular Concern."

Based on these data and DMF's assessment of age 0 and 1 distribution, the New England Council concluded that the entire perimeter of the Gulf of Maine from mean low water to a depth of 30 feet below mean low water should be designated as "Habitat Areas of Particular Concern." Here is where the emphasis on habitat for increasing survival of ages 0 and 1 cod has been placed. For this reason the importance of the Sanctuary for age 0 and 1 improved survival through more habitat protection (i.e., bottom trawling prohibitions) is quite questionable. Providing more habitat in the Sanctuary may not have the desired effects. Habitat already is widespread throughout the Gulf of Maine where the nursery function is prevalent. See the attached figures depicting relative abundance (number per tow) of ages 0 and 1 cod from DMF spring and autumn inshore trawl surveys from 1978 through 1999.

If the Sanctuary Plan is to include areas requested of the Fishery Management Council for closures to trawling and scallop dredging to improve survival of ages 0 and 1 cod, the Plan must first make a compelling case as to how areas that historically have had low abundance of young stages of cod can be transformed to mimic very productive inshore areas. This is a major issue heretofore not considered.

This is an emerging Sanctuary resource management issue of great significance, and it is central to the issue of fishery or ecological reserves being considered for a portion of the Sanctuary. It's likely this suggestion was made as part of an ongoing initiative by environmental organizations to spotlight the Sanctuary as the archetype MPA to be part of their sought-after network of marine reserves in the Gulf of Maine. DMF supports establishing marine reserves only when there are very specific, unambiguous, attainable objectives and when there will be effective, timely monitoring to determine success of reaching reserve's objectives. Those objectives must be consistent with fisheries managers' plans to improve stock status and enhance habitat protection. Consequently, any consideration of a reserve(s) in the Sanctuary must be very carefully considered and well justified. Stakeholder involvement in MPA (i.e., reserve) identification and support for implementation are critical elements of a successful MPA.

Furthermore, any consideration should avoid use of a Sanctuary reserve as an element of precautionary fisheries management. While some reserve proponents will find this intent very attractive, fisheries managers will not. Building productive and cooperative relationships with New England Council and state fisheries managers is an important issue and should be a Sanctuary high priority.

Another emerging Sanctuary resource management issue is protection of biodiversity. Protecting marine biodiversity is a relatively recent objective, and it can be ambiguous. Because the Sanctuary places a high premium on this concept, the Sanctuary should better define the term especially as to how and to what extent habitat loss in the Sanctuary affects biodiversity. If biodiversity is reduced, what are the consequences? How is the efficacy of the Sanctuary affected? The impetus for protecting biodiversity is the accelerating rate of species disappearance (extinction) due to habitat loss, pollution, and introduction of exotic species. An issue is why this impetus pertains to activities within Sanctuary boundaries.

Requiring biodiversity protection is very defensible and required for many areas on land and for marine areas with coral reefs, sea grass meadows, mangrove swamps and other fragile, unique ecosystems easily destroyed by human activities. But the Sanctuary is a dynamic oceanographic area with an ecosystem typical of temperate climes having a complex pattern of seasonal changes in productivity. The public and especially the fishing industry requires a good explanation about why the Sanctuary's biodiversity is special enough to warrant possible future closed areas to protect that biodiversity.

Another scoping issue is adequacy of Sanctuary boundaries and zones to protect Sanctuary resources. We see no reason to expand the boundaries or to change them in any way. The Sanctuary already poses a challenge for its administration, including research, monitoring, and enforcement. We suggest a continued focus on the Stellwagen Bank area and an avoidance of the likely conflict with the fishing industry that will occur if the Sanctuary's scope is widened to include areas such as Jeffrey's Ledge. First identify what needs to be done in the existing Sanctuary. Make a compelling case for those changes. Evaluate the consequences of those changes. If benefits prove to be significant, then consider a Sanctuary expansion based on results and not supposition.

Zoning is a concept applied by DMF in territorial waters of the Commonwealth. It involves a great deal of careful planning and justification and a major investment in at sea enforcement and monitoring. Some of our zoning efforts appear to have been successful but only with special efforts by enforcement to make it work. If the Sanctuary attempts to zone the Bank and nearby environs for whatever purpose, it must learn from our experience and temper its enthusiasm for the approach with a large dose of harsh reality. High priority issues such as protection of special locations (e.g., wreck of the Portland) should be the focus of zoning requiring enforcement and monitoring with already limited Sanctuary funds.

At the Provincetown public hearing you expressed your concern about sand eels in the Sanctuary. I believe you said that sand eel abundance was down, and that was a concern. Sand eels are important prey for marine mammals. Although we cannot comment on whether abundance is up or down, we can respond to your suggestion that trawling or scallop dredging in the Sanctuary might be having an impact on sand eel abundance due to impact on sand habitat. That was your implication, although perhaps I misunderstood your point.

We bring your attention to a recent paper published in Marine Ecology Progress Series entitled "Sand eel recruitment in the North Sea: demographic, climatic, and trophic levels" (August 2002, Vol. 238). These U.K. researchers concluded that climate change may impact upon sand eel populations in the North Sea. They speculated that the southern limit of the species' distribution could shift northward if conditions become warmer, and recruitment might become compromised by rising temperatures. They highlighted that the North Atlantic Oscillation has been in an extreme positive phase during the last half century, and the resultant climate forcing can have major effects on fish populations (perhaps on sand eels). Over the last few years, at least, we've witnessed warmer temperatures in Massachusetts Bay and a northward shift of more southern species (e.g., black sea bass) indicating some important change in sea temperatures.

Furthermore, abundance of other species may be having an important effect on sand eel abundance. As noted in Fishes of the Gulf of Maine (Bigelow and Schroeder 2002), "Western North Atlantic populations of sand launce increased dramatically in the

early 1980s. This population explosion was correlated with a decline in herring and mackerel. Sand launce seemed to have replaced these stocks..." Currently we have extremely large abundance of both herring and mackerel off our coast. If there is a relationship, sand eels may be suffering the consequences of this ecosystem shift in species dominance.

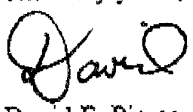
Furthermore, whiting are aggressive predators of sand eels that "do not hesitate to follow them up onto the sand, often stranding them in such numbers as to cover the flats" (Bigelow and Schroeder). Consider that the last assessment of whiting abundance revealed that "temperature patterns and trends in silver hake distribution support the view that there has been a shift in range from south to north, forced by environmental conditions." Biomass is high and is "likely near carrying capacity." This is quite a statement, and it has serious implications for sand eel abundance and Sanctuary denizens that depend on eels (marine mammals). A whiting fishery in or near the Sanctuary makes a great deal of sense especially when prosecuted with the sweepless trawl - the gear you witnessed in action on the Blue Skies.

Sand eels dart into and burrow in sand for temporary shelter. They escape into the water column when disturbed. There can be no adverse effects on sand eel abundance from trawling or scalloping in sandy areas or wherever else they reside. Abundance is affected by the environment and interactions with other species (predators and competitors).

In conclusion, DMF looks forward to working with you and your staff on action plans for the Sanctuary. Opposing points of view expressed at the public hearings will have to be debated and reconciled if possible. The next few months leading up to the Draft Management Plan for the summer 2003 should witness the clash of agendas of people and organizations wanting to seize this Sanctuary initiative as the vehicle to maximize habitat protection in the interest of precautionary habitat management, and even precautionary fisheries management.

We hope it doesn't come down to a win-lose situation for those people and organizations, DMF included, with Sanctuary staff being whipsawed by those competing for Sanctuary favor. There must be win-win situations. The Draft Management Plan must be rife with research agendas and strategies to answer important Sanctuary questions and with actions plans related to protection of well-defined, sensitive habitat. There also must be a blueprint for continued cooperation with and support from the fishing industry and state and Council fisheries managers who share many of the same concerns as the Sanctuary.

Sincerely yours,



David E. Pierce, Ph.D.
Deputy Director

Paul Diodati
Massachusetts Marine Fisheries Commission

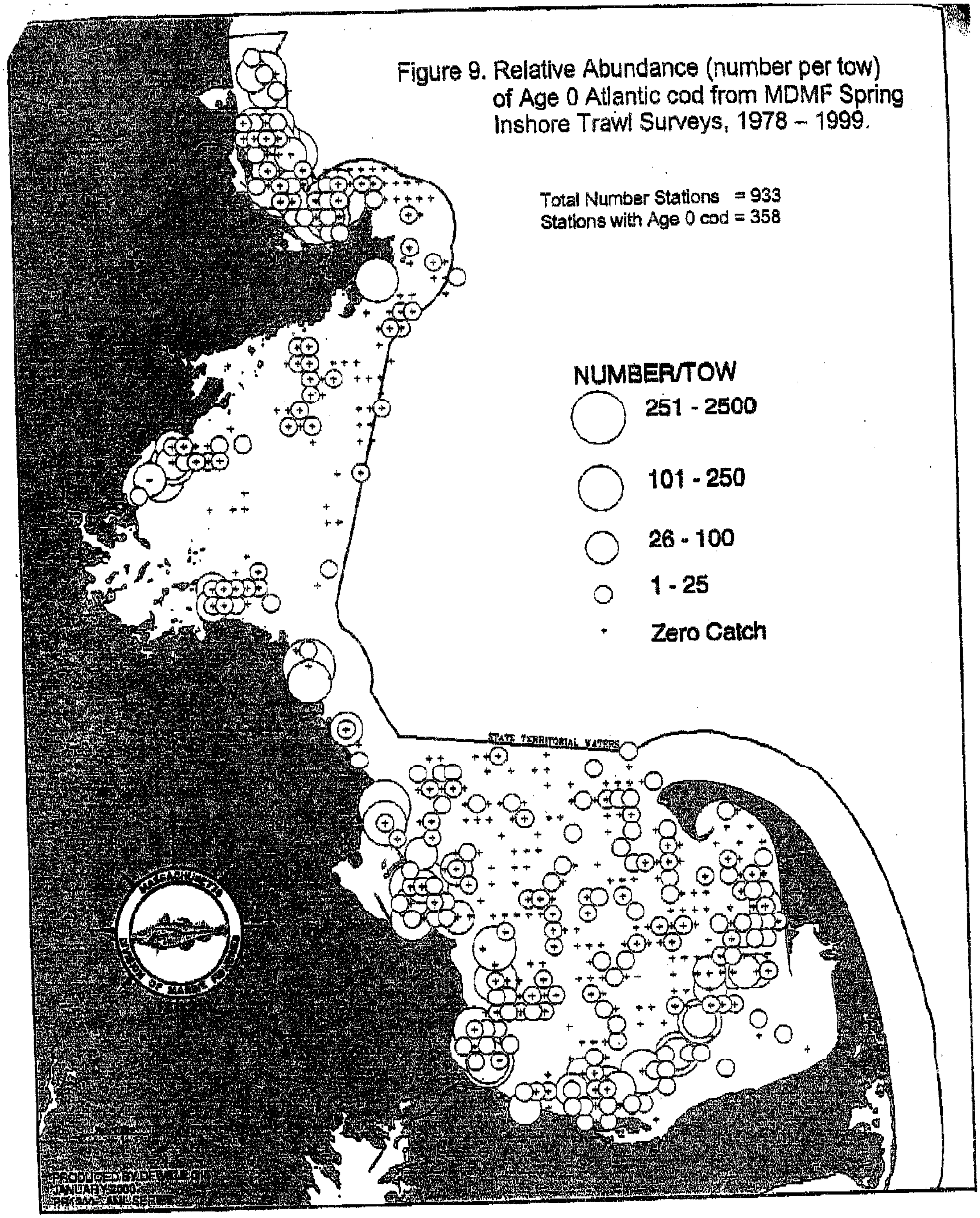


Figure 9. Relative Abundance (number per tow) of Age 0 Atlantic cod from MDMF Spring Inshore Trawl Surveys, 1978 – 1999.

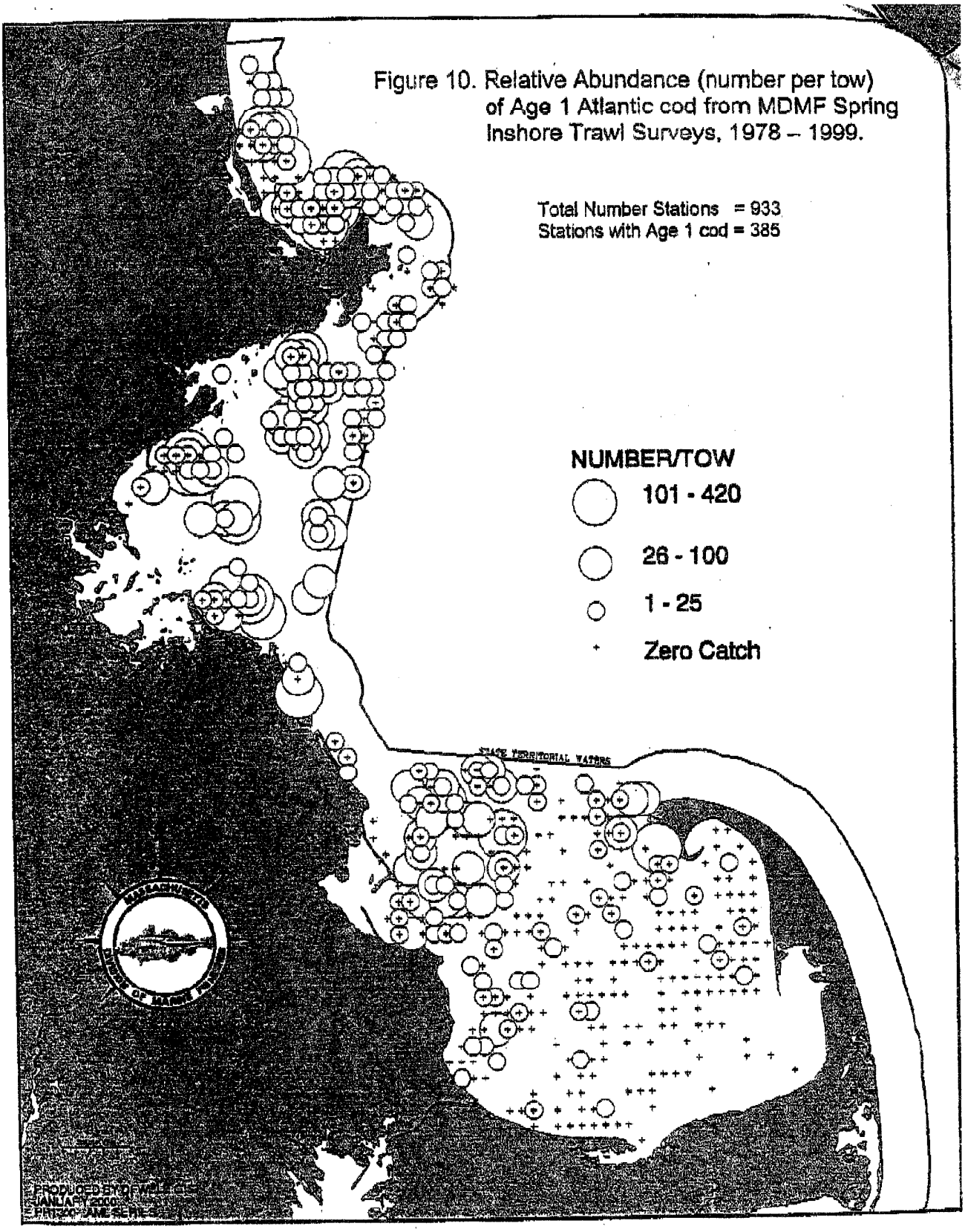


Figure 10. Relative Abundance (number per tow) of Age 1 Atlantic cod from MDMF Spring Inshore Trawl Surveys, 1978 – 1999.
Total Number Stations = 933
Stations with Age 1 cod = 385
NUMBER/TOW
101 - 420
26 - 100
1 - 25
Zero Catch
STATE TERRITORIAL WATERS
PRODUCED BY DFW
JANUARY 2000
PRT200 AME SERIES

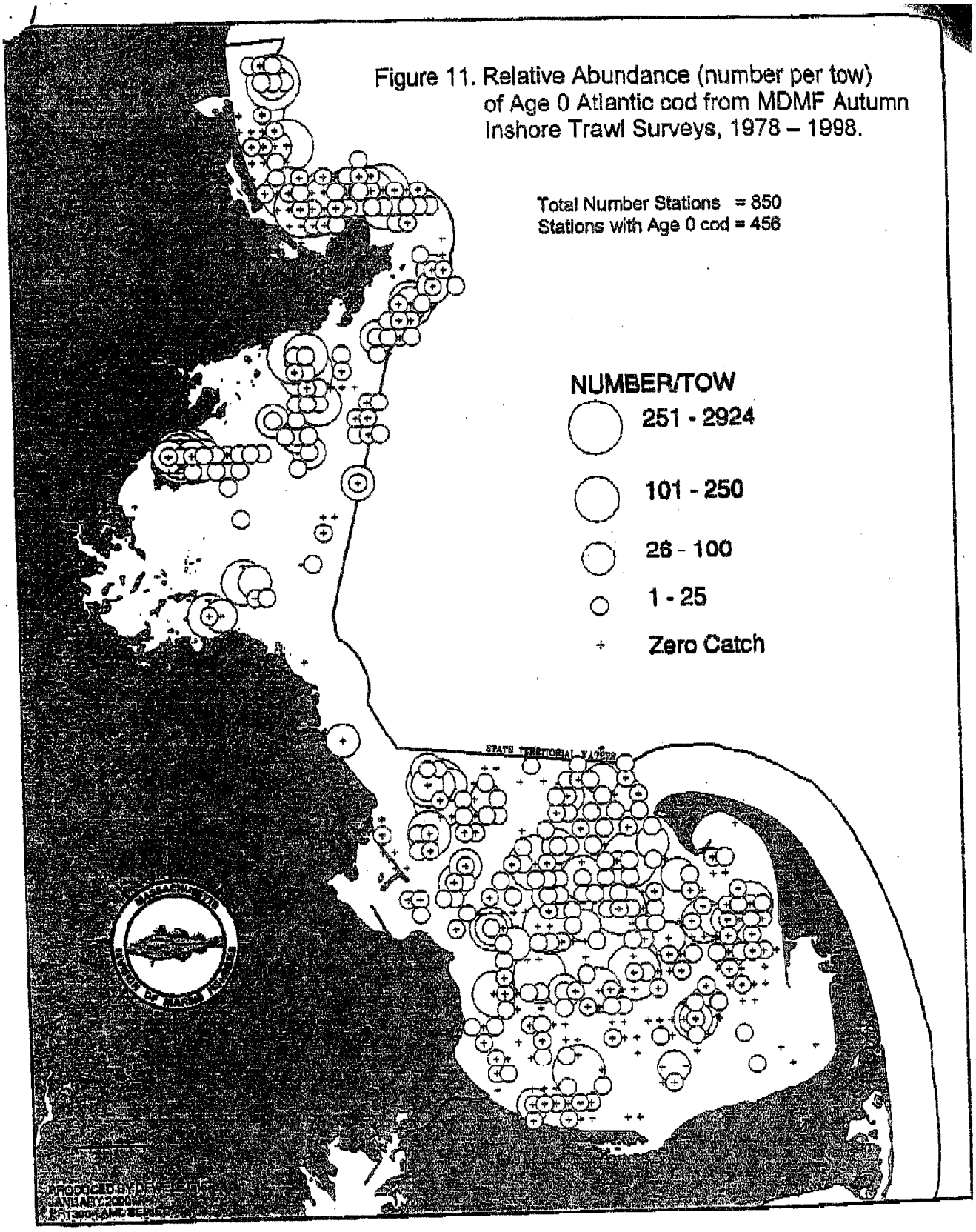


Figure 11. Relative Abundance (number per tow) of Age 0 Atlantic cod from MDMF Autumn Inshore Trawl Surveys, 1978 – 1998.
Total Number Stations = 850
Stations with Age 0 cod = 456
NUMBER/TOW
251 - 2924
101 - 250
26 - 100
1 - 25
Zero Catch
STATE TERRITORIAL WATERS

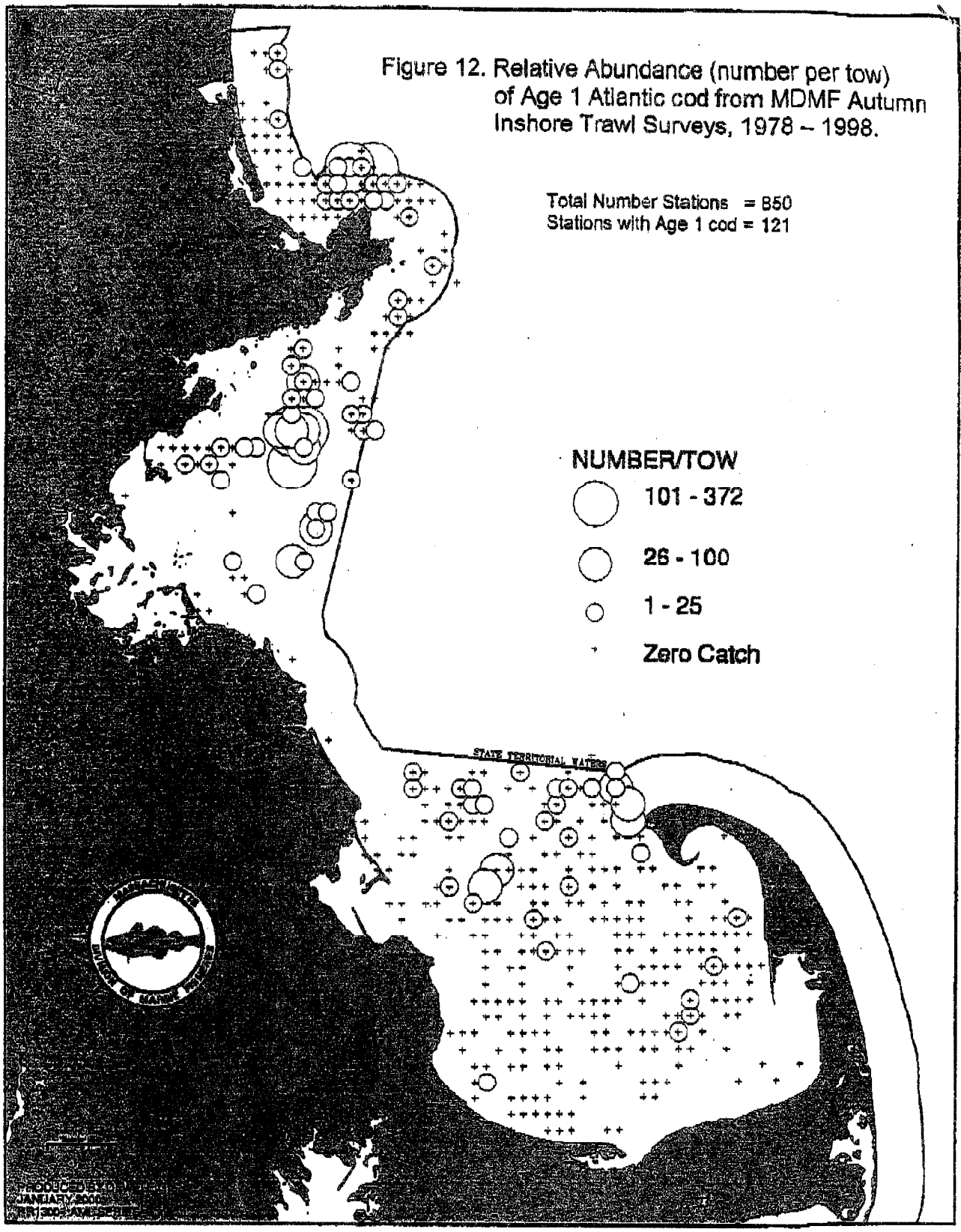


Figure 12. Relative Abundance (number per tow) of Age 1 Atlantic cod from MDMF Autumn Inshore Trawl Surveys, 1978 – 1998.
Total Number Stations = 850
Stations with Age 1 cod = 121
NUMBER/TOW
101 - 372
26 - 100
1 - 25
Zero Catch
STATE TERRITORIAL WATERS

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October 17, 2002

Mr. Craig MacDonald
Sanctuary Superintendent
Stellwagen Bank National Marine Sanctuary
Also via fax: (~~508~~ 781) 545-8036
Also via email to: sbnmsplan@noaa.gov

RE: Comments on Scoping of Issues for the management plan review of the Stellwagen Bank National Marine Sanctuary.

Dear Mr. MacDonald:

We are hereby submitting these comments on your agency's scoping of issues for the management plan review of the Stellwagen Bank National Marine Sanctuary on behalf of the 300,000 members of Environmental Defense.

Environmental Defense has consistently been a strong supporter of the National Marine Sanctuary Program. We have worked extensively, in conjunction with other national organizations, to help ensure adequate annual federal funding levels for the Sanctuary Program. Environmental Defense is, however, increasingly concerned that the living marine resources within the Stellwagen Bank National Marine Sanctuary exhibit compelling and well-documented evidence of biological declines, in spite of their Sanctuary status. Since the thirteen National Marine Sanctuaries are considered to be the crown jewels of America's marine environment the public trust responsibility of the Sanctuary Program, as stated in the National Marine Sanctuaries Act, requires that the biological diversity and ecological integrity of sanctuary ecosystems be conserved and sustained. The present management plan review offers a timely opportunity to ensure that these goals are achieved in the Stellwagen Bank National Marine Sanctuary.

We encourage the Sanctuary Program, the Sanctuary Advisory Council, and the Sanctuary staff to take full advantage of the current management plan review process to implement substantial improvements in current management strategies. Now is the time to address the problems we are experiencing within Sanctuary waters with respect to each of the following areas of concern:

1. Vision for a National Marine Sanctuary

The mission of a National Marine Sanctuary, according to the National Marine Sanctuaries Act, is "to preserve, protect and enhance the biodiversity, ecological integrity, and cultural legacy" of the Sanctuary. This is a noble and worthwhile mission for the 13 existing Sanctuaries, which are considered the jewels of the ocean environment. However, this mission cannot be successful in the Stellwagen Bank National Marine Sanctuary without a comprehensive vision of what it would mean for the unique ecosystem that is found here. This management plan review presents an opportunity for Sanctuary managers, along with the many stakeholder groups that depend on and value the Sanctuary, to create a vision of the Stellwagen Bank that is true to its legal mandate. The Sanctuaries are charged by the American public with stewardship of marine resources of national significance and many members of the public expect the title Sanctuary to provide a greater level of protection. To ignore the need to implement additional levels of resource protection, where evidence indicates such measures are needed, risks undermining public and legislative support for the Sanctuary Program.

2. Inventory of Resources at Risk:

The Sanctuary was originally established to address what were then considered to be the primary threats facing the ecosystem: floating casinos, an old hazardous waste dumping site, offshore oil and gas drilling and sand and gravel mining. Since then, the health of some biological systems has deteriorated within these waters from different threats. Populations of many species of groundfish, for example, have experienced severe declines. Habitats critical to these declining species are found extensively within the boundaries of the Stellwagen Bank National Marine Sanctuary. While the New England Fishery Management Council (NEFMC) is working to try to respond to these problems through Amendment 13 and other measures, Sanctuary managers cannot ignore the biological declines within their own Sanctuary waters. The special mandate of the Sanctuaries to protect biological diversity while allowing compatible uses differs from the emphasis put on maximizing fishery yields by the NEFMC.

The continuation of industrial-scale fishing in most Sanctuary waters with no restrictions aimed at protecting wildlife and habitat seems incompatible with the mandate of the Sanctuaries. In addition, there are indications that fishing gear damage to critical bottom habitats of the Stellwagen Bank National Marine Sanctuary may necessitate additional management measures in some areas of that Sanctuary. We therefore encourage the National Marine Sanctuary Program to take an objective, science-based look at the status and trends of sanctuary resources to enhance protection of biological resources, with the goal of recommending appropriate actions as part of the management plan review.

3. Alteration of Seafloor Habitat and Plan for Restoration of Declining Biological Systems and Damaged Habitat:

There is growing evidence that fishing effort with certain gear types, particularly bottom trawls and dredges is having significant and measurable impacts on benthic communities

in the Sanctuary. Where biological declines are found, and where biological declines are linked to habitat conditions or attributable to human extractive activities, remedial measures need to be evaluated in the Sanctuary management plan review process. Marine zoning, which restricts or prohibits activities in certain areas known to particularly sensitive to such impacts, is an important way to address these issues. Such a zoning scheme should include fully protected marine reserves where appropriate.

4. Threats to Marine Mammals

The dependence of marine mammals, particularly humpbacks and Northern right whales, on the ecosystem within the Stellwagen Bank National Marine Sanctuary was a critical factor in its selection as a Sanctuary. All due efforts must be made to make the Sanctuary a true haven for these endangered animals. In recent years the number and speed of vessels traversing the Sanctuary have increased significantly, leading to an increase in the threat to marine mammals. Ship strikes are one of the leading causes of injury and deaths to marine mammals, particularly Northern right whales and the Sanctuary should take a lead in reducing harm to these animals. Speed limits should be devised for all watercraft traversing the Sanctuary, including fishing vessels, large commercial ships, ferries, personal watercraft and whale watching boats.

Entanglements are also a major threat to marine mammals in and around the Sanctuary. The high concentration of lobster gear and gillnets within the Sanctuary.are potentially hazardous to whales and entanglements and near missed have been witnessed within Sanctuary boundaries. NOAA's Take Reduction Team has developed new guidelines to reduce these risks and we urge the Sanctuary managers to work closely with those involved in this effort. The development of additional restrictions on potentially harmful gear are well within the purview of this management plan revision and should be considered as part of a marine zoning scheme in area and at times when whales are present.

5. Waste Disposal and Water Quality

While baseline water quality in the sanctuary is generally considered to be good in most areas, there is potential for impacts from waste treatment plants, outfall pipes, and personal and commercial watercraft. Boats and ships, including whale watch boats and personal watercraft present a threat to water quality within the Sanctuary. Although US Coast Guard (USCG) regulations regarding the discharge of sewage are in effect within the Sanctuary, these are not adequate to protect these waters. The sanctuary management plan update should now make certain that sensitive Sanctuary ecosystems are protected beyond the minimum USCG requirements, from any such discharge within Sanctuary waters.

The City of Gloucester has proposed discharging sewage waste offshore, near Sanctuary waters. This would present a grave threat to the health and water quality of the Sanctuary. The sanctuary management plan update should make certain that sensitive Sanctuary

ecosystems are fully protected, in the regulatory sense, from any future ill-advised discharge schemes. Given the preponderance of ocean waters in the Northeast that have been damaged or destroyed by human intervention and the public's clear concern about water quality, the precautionary principle should be applied by Sanctuary managers in protecting these critical offshore areas from further degradation.

The public is still greatly concerned with the nearby Massachusetts Water Resources Authority outfall pipe and is not convinced that its impacts are negligible. It is encouraging that the Sanctuary staff has contracting with Batelle Labs to expand the monitoring efforts associated with the outfall. Monitoring and improvement of water quality in all parts of the sanctuary should be a high priority for the management plan review process.

6. Invasive Species

Ballast water discharges and bilge pumping have been implicated in altering the species mix of many coastal areas by introducing the larvae of invasive species. The shipping traffic that comes through the Sanctuary en route to or from Boston Harbor presents such a threat to Stellwagen Bank National Marine Sanctuary. Preventive measures to preclude the introduction of invasive species, such as restricting ballast water discharge within Sanctuary waters, requiring offshore ballast water exchange and encouraging the development of ballast water treatment facilities in major ports, are well within the purview of the management plan review and should be pursued as part of this process.

7. Marine Reserves/Zoning:

The value of additional protections afforded to certain areas of the marine environment has been demonstrated throughout the world, including within the waters of the Gulf of Maine. For example, when the majority of New England's commercial fish stocks collapsed in the 1990's, the New England Fishery Management Council initiated the use of large closed areas as a management tool. These closed areas are credited with the improvement that has been seen in many fish stocks. Additionally, the reauthorized Magnuson-Stevens Fisheries Conservation and Management Act recognized the importance of habitat protection in supporting sustainable fisheries. The habitat recovery seen within the Northeast corner of the Sanctuary, the area commonly known as the "Sliver", demonstrates that increased protection can help restore habitat within the Sanctuary itself.

Fully protected marine reserves, where all fishing and other extractive activities are banned, offer great promise for the restoration of certain marine species now depleted within the Sanctuary and for the protection of biological diversity and ecosystem health. The implementation of fully protected marine reserves should be retained as one of the tools available to Sanctuary managers to respond to declining fish stocks and loss of invertebrate populations. Because the Stellwagen Bank National Marine Sanctuary contains important habitat types for some of the marine species most at risk, full protection for some areas must be considered as part of the management plan review

process. If the no-action alternative is contemplated by any Sanctuary manager with respect to implementation of marine reserves, the full range of consequences of not acting must be considered, including the fact that the no-action alternative will inevitably lead to more assessments, more overfished species, more closures, smaller trip limits, and increased fishing restrictions.

8. Commercial Submerged Cables:

Recent advances in telecommunications technology have created a demand for cable corridors, which transit sensitive areas of the Stellwagen Bank National Marine Sanctuary, and one such cable has already been laid. While digital communications via undersea cables can potentially be viewed as an environmental boon, reducing fossil fuel consumption and thus possibly reducing transportation of hazardous petroleum cargoes through sanctuary waters, specific cable routes must be evaluated on a case-by-case basis to ensure that important biological resources are not adversely impacted by such construction.

The company responsible for the cable that currently traverses the Sanctuary, 360 Networks committed to paying $300,000 a year towards research on the impacts of such a cable as a condition of the permit. However, 360 Networks has failed to pay the second year's funds because it has filed for bankruptcy under Chapter 11. We strongly urge the Department of Commerce to use all legal means available to pursue these funds, which are critical to determining and monitoring of the impacts of cables.

Installation of cable landfalls using laybarge technologies may also create the potential for oil spills and introduced turbidity in particularly sensitive intertidal areas, and mitigation measures should be required to address this threat. The process of permitting new commercial submerged cables through the waters of the sanctuary should put the burden of proof to demonstrate "no harm" on the project sponsors. Cable corridors should not be treated as a franchise which it is the automatic right of Sanctuary managers to sell, but rather presented as a challenge submitted to the project sponsor to demonstrate both the need for, and the innocuous impact of, each specific routing and installation technique.

9. Sanctuary Boundary Adjustments:

Discussions have been forthcoming for some time about a potential adjustment of the current boundary line to include greater parts of Jeffrey's Ledge in the Sanctuary. Current boundaries include only a small part of this feature, which is considered to be part of a contiguous ecosystem, particular as used by marine mammals for feeding. Consideration of a sanctuary boundary adjustment should evaluate the possibility that enhanced protection of particular biogeographic provinces, and related habitat types, could best be accomplished within a single Sanctuary boundary.

10. Special Areas of Concern Within Current Sanctuary Boundaries:

Within the current boundaries of the Stellwagen Bank National Marine Sanctuary lie particularly sensitive biological "hot spots", including feeding areas for endangered humpback and Northern right whales. Biological areas of concern also include key Essential Fish Habitat (EFH) areas. These "centerpiece" biological areas of concern should be carefully identified, evaluated, and then subjected to a higher level of protection from damaging activities by the Sanctuary managers.

11. Scientific Research

The Stellwagen Bank National Marine Sanctuary each has an admirable research program, primarily in partnership with existing research institutions in the region. This research should be continued and expanded, to increase understanding of the unique ecosystem of the Bank. Such research can also provide insights for the management of marine resources outside the Sanctuary. In 1997 the National Marine Fisheries Service and the New England Fishery Management Council (NEFMC) established the WGOM Closed Area, which overlaps 22% of the northeastern part of the Sanctuary. The four major bottom types found within the overlap area, sometimes known as the Sliver, are representative of the four types found in the Gulf of Maine: boulders, cobble, sand, and mud.

Sanctuary staff were quick to recognize and take advantage of the unprecedented research opportunity presented by the Western Gulf of Maine Closure and several important and valuable studies are underway in that area. Many scientists have already advantage of the reduction in bottom disturbance to conduct comparative studies between the closed area and more disturbed sites nearby. Results suggest that reducing the impact on these areas has helped to restore bottom habitat. The Habitat Technical Team of the NEFMC has recommended that the WGOM Closed Area be designated as a Habitat Closed Area as an option under Amendment 13 to the Multispecies Fishery Management Plan for the purpose of protecting essential fish habitat (EFH). In a letter to the Habitat Technical Team, Sanctuary managers strongly urged "the Council and its groundfish committee to incorporate habitat closed area 1 into the draft Amendment 13." The letter cited the "multiple objectives" this closed area would meet including "recovering groundfish stocks, protecting sanctuary resources, protecting EFH, and establishing a research/reference area." We agree with this assessment and urge the Sanctuary to work with the Council to create a habitat closed area that could also function as a research reserve within Stellwagen. Currently this area is closed to groundfishing but the bottom is still fished by shrimp trawlers and fishing with gill nets, lobster pots and long lines also occurs within the Sliver. We urge the Sanctuary to increase the protection for this area so that it may serve as a research and reference area to aid in the study and management of both the Sanctuary and the fisheries of the region.

12. Socio-economic Research

The Sanctuary is valued by many groups, including commercial users who are economically dependent on their activities within Sanctuary waters. To ensure a fair review process and the adoption and implementation of improved management measures,

the economic impacts of such measures should be fully investigated and analyzed. The both the immediate as well as the long-term costs and benefits of new measures should be fully analyzed. Such analysis can often reveal that over the long-term, greater ocean protection accrues significant benefits to both the environment and commercial users such as fishermen. To enable such comprehensive socio-economic analysis, the Sanctuary should invest in baseline data collection to determine the full use and non-use values of the Sanctuary. This should include the economic benefits of current extractive uses (e.g., commercial and recreational fishing), the benefits of non-extractive uses (e.g. whale watching and tourism) and the non-use existence value to the public locally and nationwide. Such analysis has been valuable in the current marine reserves process underway in the Channel Islands National Marine Sanctuary.

13. Educational Opportunities and Public Outreach:

The important social and ecological values of the Stellwagen Bank National Marine Sanctuary remain largely unknown to major segments of the public. In a recent poll conducted in New England by Environmental Defense and other conservation groups, only 9% of New Englanders had heard of Stellwagen Bank. The establishment of new interpretive facilities in local communities, even if such outreach is limited by budgetary considerations to a simple electronic kiosk or appropriate signage, would go a long way toward fostering greater public understanding and appreciation for the role of the Sanctuaries in protecting our national treasures in the ocean. The existing displays, included the electronic exhibit at Provincetown, should be better advertised to attract more visitors. The Sanctuary should update and expand the signs posted by the New England Aquarium and explore the possibility of collaborating with the Aquarium and other education institutions to reach a wider public.

14. Monitoring and Enforcement:

Overlapping agencies with multiple jurisdictions and differing priorities each have some role in co-management and monitoring of the waters of the Stellwagen Bank National Marine Sanctuary. Cooperative interjurisdictional efforts to facilitate better coordination among these agencies, in order to ensure that the management mandate of the Sanctuary is not compromised, should be a priority. Management plan review should encourage and prioritize new avenues of monitoring while maintaining the present high degree of focus on monitoring and stewardship of sanctuary resources.

Thank you for this opportunity to provide comments on the Scoping of Issues for the management plan review of the Stellwagen Bank National Marine Sanctuary. It is our view that a comprehensive approach to review of the Sanctuary management should be undertaken at this time, because of the infrequency of such reviews, the observed declines in important Sanctuary species, and the dynamic nature of human impacts on Sanctuary resources. Please feel free to contact us if you have further questions on our comments.

Sincerely,

for Danielle Luttenberg
Marine Advocate
Dluttenberg@environmentaldefense.org

Environmental Defense
18 Tremont Street, Suite 850
Boston, MA 02108
(617) 723-5111

Cc:

Mr. Dan Basta, Director, National Marine Sanctuary Program
Mr Ed Lindeloff, National Marine Sanctuary Program

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FAX COVER SHEET

TO: KATE VAN DINE

FAX # 781- 545- 8036

PHONE #

FROM: ELAINE HORN

FAX # 617-723-2999

PHONE # 617-723-5111

DATE: 10/17 TIME: 3:00

NUMBER OF PAGES, INCLUDING THIS COVER 21

KATE,

Please submit these as public comment for the sanctuary review.

Those signatures w/out the paragraph on top are the backs of pages - everyone who signed this agreed to the text.

Thanks
Elaine

257 Park Avenue South · New York, NY 10010 · Tel 212 505 2100 · Fax 212 505 2375 · www.environmentaldefense.org
Washington, DC · Oakland, CA · Boulder, CO · Raleigh, NC · Austin, TX Project Offices · Boston, MA · Los Angeles, CA

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Protect Ocean Wildlife and Habitat in Stellwagen Bank National Marine Sanctuary

Dear Superintendent MacDonald:

I am writing to register my concern about habitat destruction and excessive fishing pressure in Stellwagen Bank National Marine Sanctuary and my support for the creation of fully protected ocean wildlife and habitat areas through the Sanctuary's management plan review process.

Stellwagen Bank is a unique ocean ecosystem that sustains a rich diversity of marine life. Pollution, excessive fishing pressure, and damaging fishing practices threaten the well-being of these distinctive creatures and critical habitats. Stellwagen Bank receives important protections as a national marine sanctuary; however, new measures are needed to help restore depleted fisheries and preserve habitat.

Compelling scientific evidence supports the establishment of fully protected ocean wildlife and habitat areas as a way to address these problems. By leaving a portion of our coastal waters undisturbed, ocean wildlife and habitat areas can restore biological diversity and provide a safe haven for species that are threatened. The resulting protected areas can also provide tangible, long-term benefits to fishermen. New England's economy and future depend on a healthy marine environment.

Please register my support for the creation of fully protected ocean wildlife and habitat areas within Stellwagen Bank National Marine Sanctuary.

Sincerely,

Name (Please Print)	Address with Zip Code	Email
Jon St. John	Po Box 999 Great Barrington, MA 01230	enviroef@sustainablenet...
Aldo Natalizia	109 Lexington St Autumndale 02466	aldo@brandeis.edu
Yuri Gyuris	109 Wood Ave. Waltham, MA 02453	yguris@brandeis.edu
Adan Ruiz	25 Crescent st Waltham, MA 02453	adan@brandeis.edu
Zhao Ma	R426 Cronin's Landing 35 Crescent st. Waltham, MA 02453	mzh@brandeis.edu
Jin Wang	Brandeis SID program Box 9110 MS078 Waltham, MA 02454	JinWang@brandeis.edu

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Name (Please Print)	Address with Zip Code	Email
Kim Freund	24 Winthrop Rd Brookline 02445	KILLINCOLN2000@yahoo.com
Scott Tatton		SPT58821X@hotmail.com
Ethan Hoag	177 Webster st E. Bost	e.hoag@att.net
Steph Shvi	170 Centre St. Milton 02186	Stephanie_Shvi@miltonedu
Lauren Murphy	21 Liberty Rd, Hingham MA 02043	Smurphy@aol.com
Robbie Gemmel	650 Columbus Ave #109 Boston 02118	zamboburg@aol.com

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Sincerely,

Name (Please Print)	Address with Zip Code	Email
Courtney Bolinger	100 Beacon St RM 401 Boston MA 02217	Vermachic@hotmail
Armandine Bimond	Beacon St 780	—
David Scardella	28 Hereford Dr. Princeton Jt. NJ 08550	—
[illegible]	170 Centre Street Milton Ma.	—
Andrew Bell	162 N. Franklin St Holbrook Ma 02343	—
Ned Arnold	100 Francis St. Brookline MA 02446	

Massachusetts Office · 18 Tremont Street, Suite 850 · Boston, MA 02108 · Tel 617 723 5111 · Fax 617 723 5052 · www.environmentaldefense.org
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Name (Please Print)	Address with Zip Code	Email
THOMAS A. GAGNON	170 CENTRE ST. MILTON, MA. 02186	Tom-Gagnon@milton.edu
M. BLOSSOM HOAG	177 Webster St. BOSTON, MA 02120	blossomhoag@att.net
Chris Akana	381799 Harvard Square Cambridge MA 02238	cakana@fas.harvard.edu

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Name (Please Print)	Address with Zip Code	Email
Dimitri Los	36 Irving Street #5 Cambridge MA, 02138	ofringa@yahoo.com
Toby Bloom	303 W Borth St. Lexington MA 02420	tbloom@brandeis.edu
Kate McCormick	114 E. Squantum St. #3 Quincy, MA 02171	kmccormick@hms.harvard.edu
P Steven West	30 Ivy Rd Wellesley MA 02482	
Sean Carberry	890 Commonwealth Ave Boston 02213	
Dan Tourret	31 Marbecrest Greenville RI 02828	

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Compelling scientific evidence supports the establishment of fully protected ocean wildlife and habitat areas as a way to address these problems. By leaving a portion of our coastal waters undisturbed, ocean wildlife and habitat areas can restore biological diversity and provide a safe haven for species that are threatened. The resulting protected areas can also provide tangible, long-term benefits to fishermen. New England's economy and future depend on a healthy marine environment.

Please register my support for the creation of fully protected ocean wildlife and habitat areas within Stellwagen Bank National Marine Sanctuary.

Sincerely,

Name (Please Print)	Address with Zip Code	Email
Vanji Kempe	289 Highland Av., Apt. 308 Somerville, MA 02144	
Natalia Cornella	131 Charles St. Cambridge, MA 01754	
Gigi Lirot	24 Oxford St Arlington, MA 02474	lirot@mit.edu
JAMES CARROZZA	40 MONROE STREET MALDEN, MA 02148	JAMES.CARROZZA@bos.frb.org
PETER MCCARTHY	191 WEBSTER ST BOSTON MA 02128	MCCARTHYDIVING@EARTHLINK.NET
Seth Mendelson	273A Cambridge St #11 Milborough MA 01752	

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ENVIRONMENTAL DEFENSE
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Protect Ocean Wildlife and Habitat in Stellwagen Bank National Marine Sanctuary

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Sincerely,

Name (Please Print)	Address with Zip Code	Email
Gregory Moura	52 Charles St. Natick MA 01760	reelcats@rcn.com
Doug Howard	38 Parker Rd Wakefield 01880	
Karen Ricciuti	15 Champlain Dr Hudson, MA 01749	VCRKarenR@aol.com
Roman Ptashka	73 Messenger St. #206 Plainville, MA 02762	VA1A77@att.net
Robert Garrity	175 Albany St - Cambridge, MA 02139	
Louisa A. Marcellino	199 Franklin St Cambridge MA 02139	LUISAFCLP@yahoo.com

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Name (Please Print)	Address with Zip Code	Email
ALAN LEHMANN	1365 TUCKER RD, DALTON NORTH, MA 01747	alhank@aol.com
Linden Wolbert	80 Boylston St. Room 7116 Boston, MA 02116	Linden_Wolbert@emerson.edu
Bill Foley	679 E. 7th St South Boston 02127	
Cassandra Krone	870 Beacon St #5 Boston, MA 02215	CKrone@bu.edu
[signature]	63 Atlantic Ave, Boston MA 02210	
Elizabeth Fuller	341 Beach Ave Hull, MA 02045	efuller@ecoisp.com

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Sincerely,

Name (Please Print)	Address with Zip Code	Email
DAVID J ZAPPALA	14 Martin Ave Salem NH 03079	KVDIVR@ATTbi.com
CAROL TOBIAN	90 Commercial St. Boston 02109	carol.tobian@actglobal.net
LISBETH BORNHOFFT	87 CEDAR ST, LEBANON NH 03766	lbornhofft@neaq.org
JASMINE DARCY	8805 THEA LANE, AUSTIN TX, 78737	02420 Jdarcy1@ftc.edu
KARL BRETTCHER	104 SMITH AVE PEMBROKE NH 03275	Sektor14@AOL.com
Jessi Notari	Franklin Pierce College FPC #1471 PO Box 60 20 college Rd. Rindge NH 03461	WisteriaDragon@hotmail.com

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Sincerely,

Name (Please Print)	Address with Zip Code	Email
Steven Hassan	Po Box 686 Newton MA 02456	steven.hassan@verizon.net

Massachusetts Office · 18 Tremont Street, Suite 850 · Boston, MA 02108 · Tel 617 723 5111 · Fax 617 723 5052 · www.environmentaldefense.org
New York, NY · Washington, DC · Oakland, CA · Boulder, CO · Raleigh, NC · Austin, TX Project Office: Los Angeles, CA

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Sincerely,

Name (Please Print)	Address with Zip Code	Email
Cathie Guiheen	Holyoke, MA 01040	cathie@rcn.com
Matthew Nuggro		TBKonta44@aol.com
Giovanni P. Antonn		Giosafari@aol.com
Tony LaCasse		tlacasse@neaq.org

Massachusetts Office · 18 Tremont Street, Suite 850 · Boston, MA 02108 · Tel 617 723 5111 · Fax 617 723 5052 · www.environmentaldefense.org
New York, NY · Washington, DC · Oakland, CA · Boulder, CO · Raleigh, NC · Austin, TX Project Office: Los Angeles, CA

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Sincerely,

Name (Please Print)	Address with Zip Code	Email
Barrett M Johnson	21A Court St. Groton, MA 01450	Bastet1115@msn.com
Bob Feldmann	" " "	bfeldmann@ensr.com

Name (Please Print)	Address with Zip Code	Email
Andrew Dassori	123 Main Street Hingham MA 02043	dassaurus5@aol
Sarah Patrick	75 Hinckley rd, Milton 02186	cocamo132@aol.c
Chelsea Peterson	72 Riverview Ave. Branford CT 06405	chelseap@mail.cc
Tim Mahan	Franklin Pierce College PO Box #87 Rindge NH 03461	[illegible]@hotmail.cc

Name (Please Print)	Address with Zip Code	Email
Donna Romano	124 Prince St Boston 02118	Romano@hetia.mgh.harvard.edu
Patrick Katzman	38 Lakehill Ave, Arlington, MA 02474	
[illegible]	33 Balcom St, Salem MA 01970	sharkfinn@attbi.com
[illegible] Ferra	5 Thistle St Lynn MA 01905	[illegible]
Dorothy Carvalho	6 Ridgewood Rd., Rockport 01966	dodie.massie@[illegible] rcn.net
Frank Carvalho	" " "	"
John Ferrier	11 Arrowhead Dr Saugus 01906	MICHAELSW@AOL.com
Bill Werner	780 Main St, Wakefield, MA 01880	bwern758@earthlink.net
Diane Anthony	14 Franklin Place Beverly MA 01915	diwindi@yahoo.com
Mary Howard	529 Franklin St, Reading MA 01867	mhoward@rational.com

Name (Please Print)	Address with Zip Code	Email
Terri Fitzgibbons		heysandu @yahoo.com
Nancy Gregory	13 Adams Ct Amesbury, MA 01913	
Alicia Lenci	43 Hooper St Chelsea MA ~~Chelsea~~ 02150	AL@Nutter.com
Tony Zaloggi	3389 ST HWY 67 FT JOHNSON N.Y. 12070	
Vicki Vollmer	"	
Linda Mangiapani		
[illegible]		
Cecilia Marcus	140 W. 69th St. NYC 10023	CECILIAMARCUS WITHLOVE YAHOO.Com

Name (Please Print)	Address with Zip Code	Email
Terence Ryan	10C Patricia Dr. Milton MA 02186	

Name (Please Print)	Address with Zip Code	Email
Adeline Murphy	44 Harry Kemp Way	Provincetown 02657
KATHY Novosel	1555 PUTNAM Dr. LANCASTER PA 17602	
Karen Dillaman	2880 Shady Hollow White Lake, MI 48383	
Jo Ellen Plouger	2880 Shady Hollow White Lk. Michigan 48383	
Jo Schaller	77 Sand Hill Rd Durham, CT 06422 06422	
LINDA POLINSKI	226 CARTERS GROVE Dr. GIBSONIA PA 15044 GIBSONIA	
Sandra Tullius	77 Sand Hill Rd Durham CT 06422	
George E Harvey	78 ASHLAND ST MANCHESTER NH 03104	
Jane Rosenbaum	5 Cooper Circle Truro Ma 02666	
Jonathan Fogel	211 E. 70St NYC 10021	

Name (Please Print)	Address with Zip Code	Email
CHARLOTTE SPINELLA	1555 PUTNAM DRIVE LANCASTER, PA 17602	—

Name (Please Print)	Address with Zip Code	Email
Tom FREUND	124 WINTHROP RD., #4 BROOKLINE, MA 02446	

Name (Please Print)	Address with Zip Code	Email
OSCAR ZAPATA	BRANDEIS UNIVERSITY, SID PROGRAM MS 078. POST OFFICE BOX 9110. WALTHAM - MA 02454	oscar@brandeis.edu
Surayo Buzurukova	Brandeis University. SID Postoffice BOX 9110, Waltham 02454, MA MS078	surayo@brandeis.edu
LENKA VITKOVA	same as above	lvitkova@brandeis.edu
Lindsey Rosenberg	44 Russell Rd Apt 1 Somerville, MA 02144	lrosenbe@brandeis.edu
Malick Ceesay	→	Malick@brandeis.edu
Jessica L. Mann	Brandeis University SID Program P.O.Box 9110 ~~Waltham~~ MS 078 Waltham, MA 02454	jmann@brandeis.edu
Desmarita Murni	SID Program; 415 South Street MS 078 PO Box 9110, Waltham, MA 02454	desma@brandeis.edu
Scott Hasselman	64 Sunstreet Waltham, MA 02453	gshass@brandeis.edu
Amy Culbertson	32 Washington Ave Waltham, MA 02453	peacejoy@hotmail.com
ALPANA PATEL	32 EVERETT WALTHAM, MA 02453	apatel@brandeis.edu
PASHUPATI CHAUDHARY	25 CRESCENT STREET # 245 WALTHAM, MA 02453	paspati@brandeis.edu
Adedoyin Onasanya	SID Program, Brandeis University MS078, PO BOX 9110, Waltham, MA 02454	aonasany@brandeis.edu
VICTOR PRODIGO	SID/HELLER BRANDEIS UNIV 60 TURNER ST. WALTHAM	vprodigo@hotmail.com
Asep S. Suntana	SID Program, Brandeis University MS 078, PO Box 9110, Waltham, MA 02454	asuntana@brandeis.edu
MIA SISCAWATI	SID Program, Brandeis University MS 078, P.O. Box 9110, Waltham, MA 02454	miasiscawati@brandeis.edu
Deana Becker	57 Gorham St. Somerville MA 02144	deanab@brandeis.edu
Alice Maclaine	8A Lexington Terrace Waltham, MA 02452	alicem@brandeis.edu
Julie Starr	7A Corinth Rd. Chelsea VT 05038	jstarr@nwf.org

Blue Ocean Society for Marine Conservation
116 Pleasant Street Portsmouth, NH 03801
Phone: (603) 431-0260 E-mail: info@blueoceansociety.org Web: www.blueoceansociety.org

October 16, 2002

SBNMS
MPR Coordinator
175 Edward Foster Road
Scituate, MA 02066

NGO ✓

Dear MPR Coordinator:

I am writing to comment on the management of Stellwagen Bank National Marine Sanctuary. I am familiar with this area through whale watching and data collection for the past 8 years in the Jeffrey's Ledge/Stellwagen Bank areas. There are several issues that should be addressed as the sanctuary reviews its management plan in the upcoming months.

Human Impacts on Marine Mammals
The existing whale watch guidelines should be enforced to limit adverse human impact on these animals, many of which are endangered species. Many commercial whale watch vessels do follow these guidelines, but there are several vessels that regularly do not. Vessels often travel through whale feeding areas at unnecessary high speed, and do not follow guidelines governing approach to whales or maximum time to be spent with whales.

In addition, private boaters and recreational and commercial fishers often are unaware of the guidelines and their importance. I urge you to conduct outreach about human impacts on marine mammals, not only toward whale watch vessels, but recreational fishers, commercial fishing boats and private pleasure boaters. Outreach could perhaps start with an informational program or flyer as part of existing boater safety/certification programs or through a mailing to New Englanders with registered boats. Ideally, it would also eventually include a certification requirement for whale watch vessel captains.

Vessel speed in the sanctuary is a great concern, as there has been a dramatic increase in vessel speed over the past several years, and a corresponding increase in collisions between vessels and marine mammals. Speed should be limited in sanctuary waters to at least below 20 knots for *all* vessels.

Boundary Expansion
Having spent most of my whale watching time on Jeffrey's Ledge, I'm familiar with the fluctuations of marine life in that area. Through data collection and speaking to other organizations, it is obvious that animals are using both

habitats, sometimes moving between the two habitats within a few days. Therefore, it is important to protect this area because of its use as habitat for endangered marine mammals.

Jeffrey's is also an important site for herring to spawn. Herring are an important commercial fish species, and also an important prey source for whales and other marine life. Due to its importance as a herring habitat, whale feeding area and whale watching and research area, Jeffrey's Ledge should be granted sanctuary status.

Impacts of Fishing

The SBNMS should study and work to mitigate the effects of fishing on the sanctuary, including affects on bottom habitat, ghost gear, and large midwater trawlers. The sanctuary should be protected from gear that damages the bottom habitat. Ghost gear should be monitored, and perhaps a volunteer group could be engaged to help clean up ghost gear, as was done a few years ago in Massachusetts Bay. There are also large midwater trawlers who seem to be competing with whales for food – often over the past several years, we have seen these large vessels trawling in an area populated with whales, only to have the whales "disappear" after the vessels have trawled there. The effects of these large boats should be studied and managed.

SBNMS Outreach Efforts

Outreach efforts for SBNMS need to be expanded and fully funded. Currently, visitors to the SBNMS web site can't even get current information – many pages haven't been updated in the last year, and there are links to pages that have no information on them. Maybe if a volunteer "Friends of the Sanctuary" group was established, these volunteers could be recruited to write articles and gather information for the web site.

The SBNMS mailing list needs to be updated – during the management process alone, money was wasted in multiple mailings to the same people (I received at least 4 copies of each mailing at various addresses). A database cleanup could possibly save staff time and much paper in the long run.

One of the problems we see every day on the water is pollution – we always encounter marine debris. More education needs to be done with the public on non-point source pollution and marine debris. Perhaps this could start with marine debris information on the SBNMS web site and a boater/marina education program.

A Sanctuary Should Look Like a Sanctuary

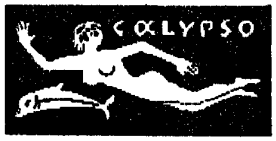
I realize the SBNMS has limited time and resources in which to accomplish its goals. But the bottom line is, there is a problem that you wouldn't know the difference whether you're in the sanctuary or not. There should be *some* limitations – some difference you would encounter when crossing into the sanctuary – either a reduced vessel speed, reduced vessel traffic, enforcement of guidelines involving marine mammals, etc. I strongly support more visible and effective protection measures for this very important habitat.

Thanks for your consideration of my concerns. If you have any questions, please feel free to contact me at 603-431-0260 or at jen@blueoceansociety.org.

Sincerely,

Jennifer Hafner

Jen Hafner
Director



The Cousteau Society

October 18, 2002

NGO ✓

Dr. Craig MacDonald
Superintendent
Stellwagen Bank National Marine Sanctuary
175 Edward Foster Road
Scituate, MA 02066

Dear Dr. MacDonald:

As the Management Plan for the Stellwagen Bank National Marine Sanctuary is being reviewed, The Cousteau Society, on behalf of more than 150,000 members, urges the establishment and enforcement of adequate no-take reserves within the sanctuary. With the proliferation of recent findings, from *Science*, *Nature*, the National Research Council et alii, there is no questioning the efficacy of no-take reserves in protecting and restoring both habitats and species. With the ongoing decline of species diversity, lack of recovery of groundfish stocks, threats to highly endangered marine mammals, there is no questioning the need for more rigorous measures to protect and restore both habitats and species.

We sympathize with the complications of managing a sanctuary subject to the jurisdictional authority of multiple agencies and the claims of multiple stakeholders. Precisely to relieve the sanctuary of the very possible damage being done while conflicting interests are sorted out, we strongly encourage you to designate no-take reserves.

Such zones, where no extractive or disturbing activities are allowed, should be based on the best available science and, even more importantly, on the precautionary approach to management, erring on the side of caution in the face of scientific uncertainty. Rather than requiring proof that a proposed activity, either within or outside no-take zones, will cause harm, we urge you to require convincing evidence that a proposed activity will not cause environmental harm.

Adequate enforcement will be necessary to meet the goals of the no-take zones, to include effective monitoring, appropriate sanctions and accessible conflict resolution mechanisms. In order to develop a community of stakeholders who understand the need for no-take reserves and are willing to comply with restrictions in order to achieve long-term gains, public education and outreach should be expanded. Reporting of management results should be included as part of these public programs, and the participation of non-governmental organizations sought to maximize their dissemination.

Yours truly,

Clark Lee S. Merriam
The Cousteau Society

The Cousteau Society, Inc.
870 Greenbrier Circle, Suite 402, Chesapeake, VA 23320-2668 Tel. 800.441.4395 Telefax 757.523.2747
92, avenue Kléber 75116 Paris Tel. 1.44.34.06.06 Telefax 1.44.34.06.07
www.cousteausociety.org • cousteau@cousteausociety.org

UNIVERSITY OF PENNSYLVANIA

John D. Crawford, Ph.D.

David Mahoney Institute of Neurological Sciences

Neuroscience Graduate Group

Project Manager / Management Plan Review
Stellwagen Bank National Marine Sanctuary
175 Edward Foster Rd.
Scituate MA 02066

Thursday, October 17, 2002

FAX: 781-545-8036
e-mail: SBNMSPLAN@noaa.gov
http://stellwagen.nos.noaa.gov

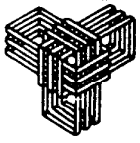
Dear Management Plan Reviewers:

I am writing to provide input to the management plan review for the *Stellwagen Bank National Marine Sanctuary* (SBNMS).

When I first learned about the National Marine Sanctuary Program, and the Stellwagen Bank Sanctuary in Massachusetts Bay, I was encouraged. The evidence is overwhelming that we need to aggressively pursue marine conservation in the Gulf of Maine, before causing further damage to ecosystems and sacrificing those marine resources that have drawn people to our waters for centuries. Fully protected marine reserves have been in use around the world for decades. For example, New Zealand has a highly successful system of marine reserves that have been used to protect ecosystems and restore commercially important species. These are carefully selected regions where everything is protected, the bottom is not dragged and the fish are not removed. At first, I thought we were forward thinking enough to have a reserve like this at Stellwagen.

When I learned more about how SBNMS was being managed, I became discouraged and angry. As a tax payer whose money is being used to run the sanctuary system, I felt cheated because SBNMS is not a sanctuary by any normal definition of what a sanctuary should be. We really do need protected marine sanctuaries in our region, we are being led to believe that we have them, but we do not.

Granted, it was an important step forward when Stellwagen Bank was protected against gravel and oil extraction in 1992. Nevertheless, with collapsed fish stocks, sea floor homogenization by draggers, and whale populations threatened with extinction, this minimal level of protection for Stellwagen is far from adequate in 2002. The goal of the management plan review should be to make SBNMS a real sanctuary where all animals and plants are protected, and where the terrain (i.e. the bottom) can not be altered.



3815 Walnut Street • Philadelphia, PA 19104-6196 • 215-898-9470

Here are some of the actions I would like the managers of Stellwagen Bank National Marine Sanctuary to implement:

1) Protect the sea floor. It is well known that dragging fishing gear across the sea floor alters the structure of the bottom, destroys many species of benthic invertebrate animals including sponges, bryozoans, corals, and amphipods, and disrupts habitat used by small fish. Some of these fishes are prey for great whales (e.g. sand lance), and all of these organisms are essential links in an ecosystem that should be protected by a sanctuary.

2) Protect the commercially exploited animals. At present, a codfish is no better protected within the boundaries of SBNMS than it would be on the Grand Banks, or anywhere else in the Gulf of Maine. The Marine Sanctuary Program must take control of fishing within SBNMS. All fishing should be banned within at least a major portion of SBNMS. If any fishing is going to be allowed within this *sanctuary*, it must be done with low impact methods, and monitored closely by sanctuary scientist so that fished populations can increase within the sanctuary, and so that the fishing gear does not impact whales, turtles and other species that the sanctuary should be protecting.

3) Reduce boat traffic through the sanctuary. There is a major shipping lane passing through the southern part of the sanctuary. Recreational boats, ferries, and whale watching vessels frequent the sanctuary with no special restrictions on their speed, waste discharge, or the density of boats within the area we are supposed to be protecting. Cargo ships should be diverted around the sanctuary. Strict speed limits should be imposed within the sanctuary to reduce collisions with whales and sea turtles. The density of boats allowed in the sanctuary at any given time should be regulated. Whale watch boats should be restricted to a perimeter area surrounding a protected core where whales can feed without being disturbed. Waste discharge of any kind should be banned within the sanctuary. Commercial boats should not be allowed within the sanctuary after dark.

4) Promote marine ecosystems research. There is no question that additional high quality research is needed in order to gain a better understanding of the complex ecological interactions that govern the success of the highly visible species that we eat or enjoy during a whale watching trip. SBNMS should be a major site for marine research on undisturbed ecosystems. This will require full protection of substantial regions of the sanctuary for research purposes.

Major changes are needed in the management of SBNMS. In the previous management Plan Review (1998), many important issues were identified for discussion but little action was taken. Many of the issues could benefit from further research, but this fact can not be used as an excuse for further inaction. If the outcome of the present review is simply to generate a new list of issues for further study, then this review will have been a failure in my view. We need better management now, and continued research so that we can do even better in the future.

Thank you for your efforts to protect this important part of our marine environment.

Sincerely,

Dr. John D. Crawford, Biologist
Associate Professor
University of Pennsylvania
12 Tally Ho Lane
Wayland, MA 01778

508-358-3347
jud@sas.upenn.edu

Advocates for Wild, Healthy Oceans

New England Regional Office
371 Fore Street #301
Portland, ME 04101

207.879.5444 Telephone
207.879.5445 Facsimile
www.oceanconservancy.org

Formerly the Center for
Marine Conservation

NGO

October 18, 2002

Sent by U.S. mail, facsimile transmission and electronic mail

Ms. Kate Van Dine
Management Plan Review Coordinator
Stellwagen Bank National Marine Sanctuary
175 Edward Foster Road
Scituate, MA 02066

The Ocean Conservancy

RE: Scoping Comments for the Management Plan Review of Stellwagen Bank National Marine Sanctuary

Dear Ms. Van Dine:

The Ocean Conservancy (formerly the Center for Marine Conservation) appreciates the opportunity to comment on the Stellwagen Bank National Marine Sanctuary (SBNMS) Management Plan Review (MPR). We commend the National Marine Sanctuary Program (NMSP) for reinstating scoping by holding nine scoping meetings in Connecticut, Massachusetts, New Hampshire and Maine this fall. Please accept the following comments on behalf of our more than 120,000 members nationwide including nearly 10,000 members in the New England states.

The Ocean Conservancy supported the creation of the SBNMS and was actively involved in developing, commenting on, and ensuring adoption of, the Sanctuary's original management plan. Our organization has been a strong proponent of periodically reviewing and revising management plans for all National Marine Sanctuaries and was instrumental in securing the legislative mandate requiring such reviews. We believe that, consistent with the National Marine Sanctuaries Act (NMSA), such reviews should be comprehensive and should include revisions to regulations as necessary to ensure that each Sanctuary provides the comprehensive and coordinated protection required under the NMSA. An Ocean Conservancy staff member currently represents conservation interests on the SBNMS Sanctuary Advisory Council, and we look forward to continued participation in the revision of the SBNMS management plan and future Sanctuary operations.

In the years since the original management plan was approved, many things have changed: there is greater understanding of the functioning and composition of healthy marine ecosystems; more demands are being placed on finite marine resources within the Sanctuary and the Gulf of Maine; and an increasing body of research has demonstrated the adverse impacts that human activities have had, and continue to have, on marine ecosystems and the consequent decline of many species and habitats. The management plan review process presents an important opportunity for the Sanctuary to revise its management plan to respond to these changes.

The revised management plan must address the intensified use of Sanctuary resources, reflect the improved state of knowledge, provide not only for more effective protection of resources but also recovery of depleted and damaged resources, and ensure the Sanctuary does a better job of fulfilling its mandate. Specifically, the revised management plan and any accompanying regulations should:

(1) Emphasize the primary goal of the NMSA to protect resources by implementing management measures to accomplish this goal, including but not limited to the following.

   (A) Establish a scientifically based network of no-take marine reserves, adequate to help protect and restore habitat, conserve wildlife, promote marine biodiversity and healthy ecosystem functioning, and provide relatively undisturbed areas for scientific research.
   (B) Implement other Sanctuary-specific limitations on fishing as needed to protect biological resources as well as cultural resources such as the wreck of the steamship *Portland* and otherwise ensure fulfillment of the Sanctuary's mandate.
   (C) Implement enforceable regulations regulating vessel speed and conduct to protect whales within Sanctuary boundaries.
   (D) Increase protection of the Sanctuary's water quality by prohibiting vessel discharge within the Sanctuary, *e.g.* graywater, ballast water and blackwater, establishing water quality standards and pollution response plans, and increasing water quality monitoring.
   (E) Consider whether the Sanctuary's boundaries should be expanded to include additional area(s), such as all of Jeffrey's Ledge, and what, if any, protective measures are needed in additional areas to protect Sanctuary resources.
   (F) Continue current prohibitions on the exploration, development, or production of industrial materials, oil and gas, sand and gravel extraction, and seabed alteration.
   (G) Establish a clear protocol with full public review for issuance of special permits to ensure Sanctuary resources are not put at risk.

(2) Increase coordination and collaboration with other agencies in order to achieve the NMSA's primary goal of resource protection.

(3) Expand scientific research and monitoring, particularly to assess the status of Sanctuary resources, the effects of human activities and other factors on those resources, and the effectiveness of management measures in protecting and restoring Sanctuary resources.

(4) Increase and strengthen public outreach and education programs.

(5) Provide sufficient resources for administration and enforcement to implement Sanctuary policies and regulations.

These recommendations are discussed in detail below. Any revisions to the management plan and accompanying regulations should be accomplished through processes (such as action plans) with specific milestones and timetables so resource protection is not delayed by indefinite implementation outside of the management plan review process. Should any of these recommendations be deemed to require modification to the "terms of designation" of the Sanctuary (which may require additional procedural steps as provided by the NMSA), the Sanctuary should immediately initiate all appropriate steps to modify the regulations as needed.

(1) The Revised Management Plan Must Focus on Protecting and Restoring Resources within the Sanctuary.

The primary purpose of the NMSA is "to maintain the natural biological communities in the national marine sanctuaries, and to protect, and where appropriate, restore and enhance natural habitats, populations, and ecological processes." 16 U.S.C. §1431(b) (3). Furthermore, public and private uses of Sanctuary resources must be "facilitat[ed] to the extent compatible with the primary objective of resource protection." 16 U.S.C. §1431(b) (6) (emphasis added). The revised management plan for SBNMS should clearly advance these purposes and policies of the NMSA.

The Sanctuary currently provides important protections from activities such as sand and gravel extraction and oil and gas development, as well as a focus for important research and public education. However, the Sanctuary has not been effective in protecting the living resources, habitats, and waters within its boundaries. The Ocean Conservancy recently completed a detailed analysis of existing marine and coastal protected areas in the area. In our report, *Marine and Coastal Protected Areas in the United States Gulf of Maine Region*, we identified over 300 federal and state protected areas, and performed three separate analyses assessing the effectiveness of these areas for long-term conservation of the Gulf's marine biodiversity. We found that most of the Gulf's waters are lacking effective protected areas. SBNMS was judged to be less effective in conserving the Gulf's marine species and habitats than fishery closures implemented to assist the rebuilding of depleted groundfish stocks. Given that the Sanctuary is obligated under the NMSA to provide protection to the full range of Sanctuary resources, this situation is unacceptable and cannot continue.

There are several specific examples that demonstrate the need for stronger protections within the Sanctuary. Many New England groundfish stocks continue to be overfished and recent research indicates that biodiversity of fishes within the Sanctuary is declining. Endangered northern right and humpback whales continue to be at risk from ship strikes, entanglement in fishing gear, and vessel traffic. Habitats and species are at risk from bottom disturbance and pollution. Water quality within the Sanctuary has been adversely affected by land-based pollution, vessel discharges and other pollution sources, threatening both marine wildlife and habitat. The revised management plan must include more effective measures to protect and restore all resources within the Sanctuary, complementing and reinforcing management measures established by other authorities to reflect a comprehensive, precautionary management approach.

These recommendations are discussed in detail below. Any revisions to the management plan and accompanying regulations should be accomplished through processes (such as action plans) with specific milestones and timetables so resource protection is not delayed by indefinite implementation outside of the management plan review process. Should any of these recommendations be deemed to require modification to the "terms of designation" of the Sanctuary (which may require additional procedural steps as provided by the NMSA), the Sanctuary should immediately initiate all appropriate steps to modify the regulations as needed.

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(A) No-Take Marine Reserves

The Ocean Conservancy believes scientifically-based no-take marine reserves, areas where no extractive activity is allowed, are necessary to protect and restore SBNMS resources as mandated by the Sanctuary Act. Since the designation of SBNMS in 1992, no-take marine reserves have increasingly been recognized as an important conservation and management tool. As a state of the art management technique for Sanctuaries that has emerged since the original management plan, implementation of no-take marine reserves should be provided for in this review. The best available science (documented by the National Research Council, the American Association for the Advancement of Science, the National Center for Ecological Analysis and Synthesis and an extensive and growing body of scientific literature from the US and around the world) testifies to the effectiveness of scientifically based no-take reserves to help protect and restore habitats, conserve species (including those of both commercial and ecological significance), promote healthy ecosystem functioning, and provide relatively undisturbed scientific reference sites. Given the urgent need to protect Sanctuary resources, including promoting the recovery of depleted species and damaged habitats, it is even more important that the Sanctuary implement a process through the management plan review to establish scientifically based no-take marine reserves.

No-take marine reserves are singularly well suited to, and necessary for, achieving the Sanctuary's purpose: "to maintain the natural biological communities ... and to protect, and, where appropriate, restore and enhance natural habitats, populations, and ecological processes." The pioneering work using reserves in the Florida Keys National Marine Sanctuary demonstrates the benefits to Sanctuary resources – in only a few years, habitats and some wildlife are already showing clear improvements. SBNMS resources can similarly benefit from no-take marine reserves.

The issues of marine protected areas generally, and no-take marine reserves specifically, raise substantive concerns regarding resource protection as well as management concerns regarding process and authority. As noted in The Ocean Conservancy's 2001 report previously referenced, *Marine and Coastal Protected Areas in the United States Gulf of Maine Region*, a variety of state and federal agencies manage numerous protected areas providing an array of management measures, but there are no no-take marine reserves providing comprehensive protection to the marine ecosystem. The number of agencies and authorities involved is often confusing, as demonstrated by recent discussions of MPAs and marine reserves in the New England region that have been disjointed and polarizing. As impacts upon the Gulf of Maine's environment grow and marine resource management becomes more complicated, it is increasingly urgent that managers consider better use of MPAs including no-take reserves. The Sanctuary can and should lead this effort by establishing an inclusive process to designate scientifically based no-take reserves with clear objectives within Sanctuary boundaries.

To date, there are no no-take reserves in SBNMS. The only sites limiting fishing in the Sanctuary have been established under the Magnuson-Stevens Fisheries Conservation and Management Act (MSFCMA). In 1998, the New England Fishery Management Council (NEFMC) established the Western Gulf of Maine closed area (WGOM), closed to commercial ground fishing; approximately 120 square miles of this area is within SBNMS

boundaries. The purpose of this closure was to assist rebuilding of depleted groundfish stocks, and it was established with a "sunset date" of 2002. This closure has assisted the Sanctuary to partially fulfill its mandates, both by reducing to some extent the impacts of fishing on Sanctuary resources and by facilitating research. Almost immediately after its establishment, Sanctuary researchers began an important study within the WGOM closure to evaluate the recovery of benthic habitat from the impacts of fishing gear used to catch groundfish. This study is unique in the Gulf of Maine, and is providing valuable ecosystem and fishery management information. Indeed, the NEFMC has considered designating the portion of SBNMS within the WGOM closure as a "research reserve," to provide relatively unimpacted areas for fishery management and habitat studies.

However, there are a number of problems with the existing closure, and with relying exclusively on the NEFMC and MSFCMA to decide its future and the role of reserves in SBNMS. First, the utility of the WGOM closure both for conservation of resources and research is reduced by the fact that other fishing activities are still legally permitted within the area. Second, this area was selected to achieve groundfish management goals, not ecosystem protection or research goals. The process to select areas within SBNMS where fishing should be limited or prohibited should consider the full range of habitats, biological communities and ecological processes to implement the NMSA mandate. Third, the closure nearly expired in 2002 and was renewed only at the last minute during complicated groundfish litigation and related management actions. The Sanctuary cannot accomplish its resource protection and research goals amidst such uncertainty about key management measures implemented within its boundaries. Fourth, progress in establishing research reserves via the NEFMC process remains uncertain. This process, begun in 1998, has since stalled. Despite a year of preliminary scoping, Council approval in 2000 to fully develop the proposal, and an even more urgent need for the information and comprehensive resource protection such sites can provide, progress on this initiative has lapsed behind action on other fishery management issues.

This situation illustrates the differences between the MSFCMA and the NMSA, and the results when management actions under one law are not designed to meet the mandate of the other. A primary objective of the MSFCMA is to secure the optimum yield from commercial fisheries. In contrast, the NMSA's mandate is to protect natural biological communities, and restore and enhance them where necessary. It is time for the Sanctuary to fulfill the mandate of the NMSA and complement the efforts of other agencies by leading a process to establish scientifically based no-take marine reserves in SBNMS, sufficient to protect resources and restore ecosystems.

No-take marine reserves established by the Sanctuary will fill a void met by no other entity in the Gulf of Maine by providing comprehensive resource protection and relatively undisturbed sites for research that are not subject to disruption caused by changes in other management regimes. Additionally, by clearly articulating the goals for reserves to provide overall ecosystem protection and scientific research sites (supporting the legislated purpose of the NMSA) and establishing an inclusive process to gather information and stakeholder input necessary to identify sites that meet those purposes, the Sanctuary would provide a procedural model that is currently lacking for utilizing this essential management tool.

The Ocean Conservancy strongly urges the Sanctuary to engage with NEFMC and other agencies as a full and active partner in establishing marine reserves in SBNMS, but not to defer this action to the jurisdiction of other agencies. In evaluating reserve options, a wide range of comprehensive alternatives should be considered with respect to, for example, the extent of reserves and implementation methods (e.g. under MSFCMA and/or NMSA). Regulations under the NMSA may be necessary to establish no-take reserves within SBNMS; if so, Sanctuary managers should work with the NEFMC to ensure the adequacy of such regulations. This process should include clear roles for all agencies involved, including assistance with scientific research, socio-economic data collection, resource protection recommendations, stakeholder involvement, monitoring, and enforcement.

(B) Consideration of Other Limitations on Fishing

The revised management plan should address the impacts of fishing activities within SBNMS and revise the management plan and regulations as necessary to protect Sanctuary resources. Fishing can adversely affect marine ecosystems in many ways. The most common effects arise through overfishing, bycatch, and changes to habitats. During the designation process, The Ocean Conservancy and others expressed concern about the effects of fishing on wildlife and habitats within Sanctuary boundaries. The current plan leaves resolution of this issue to better implementation of fisheries management through the MSFCMA, but this approach has not adequately protected Sanctuary resources from the adverse effects of fishing as required to meet the mandate of the NMSA. Sanctuary managers can and should take all appropriate steps to regulate fishing activities, in cooperation with the NEFMC, to ensure that SBNMS resources, both living and non-living, are protected and, where necessary, restored.

Other limitations on fishing activities in addition to the implementation of no-take reserves within SBNMS should be considered in the revised management plan to ensure adequate protection and recovery of Sanctuary resources. For example, limitations on the use of bottom gear may be required to protect sensitive species or habitats, or cultural resources (such as the wreck of the steamship *Portland*). If such limitations are deemed necessary, a wide range of comprehensive alternatives should be considered, including Sanctuary-wide measures (such as gear modifications) and zoning options (such as partial closures and gear restrictions). Research and monitoring should evaluate fishing impacts on Sanctuary resources, and the effectiveness of management measures to reduce such impacts so management can be modified in the future as needed to protect resources.

(C) Marine Mammal Protection

The revised management plan should increase marine mammal protection within SBNMS boundaries. Seventeen species of whales are known to frequent the Sanctuary, including endangered northern right and humpback whales. The Sanctuary is nationally known as a premier whale-watching destination, by commercial whale-watching as well as casual whale-watching participants. Since the Sanctuary's designation in 1992, impacts on these animals within the Sanctuary have increased, including disturbance and harassment, as well as injurious or fatal collisions between vessels and whales. Our knowledge of how better to protect the animals from these and other impacts has also increased, and the revised management plan should reflect that knowledge. Other efforts are underway to address

some of these issues region-wide, for example through the Large Whale Take Reduction Team and the ship strike committee, but the Sanctuary should fulfill the mandate of the NMSA and establish additional protection to comprehensively protect marine mammals within Sanctuary boundaries.

The revised management plan should establish enforceable regulations for all vessels, commercial and private, to govern conduct around marine mammals. Regulations are needed to protect whales from the impacts of both private and commercial whale-watching, as well as the conduct of all vessels in Sanctuary waters, by implementing measures such as safe speed zones in high use areas, safe viewing distances, and limited numbers of vessels in close proximity to whales. The current whale-watch guidelines have not reduced the potential threat of injury or mortality by whale-watching vessels, both private and commercial, to large whales, as is evidenced by the two reported lethal collisions that occurred in 1998, as well as past and present reports of harassment and injury (65 FR 270). The unenforceable nature of the existing guidelines and NMFS's failure to adequately educate both the general public and all whale-watch vessels about these guidelines points to the need for strong, enforceable, and risk-adverse regulations accompanied by a strong public and industry education component. A comprehensive education effort should accompany implementation of enforceable regulations to ensure that all vessel traffic within SBNMS is aware of the regulations.

Entanglement with fishing gear and collisions with commercial vessels continue to harm marine mammals. In revising the management plan, the Sanctuary should address these issues and consider measures to further reduce fishing gear within its boundaries, require unique gear marking for fishing gear used in the Sanctuary, and implement speed limits within the Sanctuary.

The Sanctuary should coordinate closely with other efforts and agencies on these issues, but the revised management plan should reflect the Sanctuary's primary objective to protect resources and allow only those uses that are compatible with that objective.

(D) Water Quality Protection

The revised management plan should address the health of Sanctuary waters and the impacts of water pollution on SBNMS resources. Since the Sanctuary was designated in 1992, the Boston sewage outfall (managed by the Massachusetts Water Resource Authority or MWRA) came online, discharging millions of gallons of secondary treated sewage daily, 12 miles from the SBNMS boundary. Vessels of all types traveling through the Sanctuary may discharge gray water and treated waste, or exchange ballast water. Such activities should be closely examined in the revised management plan to ensure the Sanctuary is protecting the marine life and related activities within its boundaries that depend on healthy oceans.

The revised management plan should develop and implement a comprehensive monitoring program to assess water quality within SBNMS, sources of contamination and the effects of contaminants and toxins on Sanctuary resources. The Ocean Conservancy urges the Sanctuary to work closely with the MWRA, other agencies and stakeholders to increase and strengthen existing efforts on monitoring. Additionally, existing response plans for pollution

events within Sanctuary boundaries should be assessed and revised as needed, and additional response plans should be developed to respond to other events as necessary to protect Sanctuary resources, including pollution events related to the MWRA outfall. Finally, the revised management plan should implement no-discharge regulations within the Sanctuary.

(E) Consideration Of Boundary Expansion

The revised management plan should address the adequacy of the Sanctuary's current boundaries to fulfill the purposes of the NMSA. Scientific understanding of the habitats and natural biological communities in and adjacent to SBNMS has improved significantly since the site's designation. This information should be used to assess the current boundaries of the Sanctuary to determine whether expansion of SBNMS should be considered.

Proposals for expansion should be justified on ecological grounds to ensure that such expansion would materially contribute to fulfilling the NMSA mandate to protect and restore Sanctuary resources. For example, if there are key habitats that are currently outside the Sanctuary's boundaries that are important for the conservation of species occurring within the Sanctuary, and if including such habitats would result in clear benefits to those species, then expansion of the Sanctuary to include some or all of those habitats should be considered.

One area to be considered is Jeffreys Ledge. When SBNMS was designated 10 years ago, the boundary lines included the southern third of this area. Since then, this entire feature has been included in the NEFMC WGOM closed area for groundfish management. Like Stellwagen Bank, the contours of Jeffreys Ledge cause upwelling and create a highly productive marine environment. Unlike Stellwagen, though, the primary prey of many marine predators on Jeffreys Ledge (including whales) is herring while Stellwagen's ecosystem is driven by a bait fish called the sand lance.

A growing body of research indicates that Jeffreys Ledge is an important habitat for much of the marine wildlife that inhabits Stellwagen Bank, and that including the entire Ledge within SBNMS could provide comprehensive habitat and ecosystem protection. Research conducted by the Whale Center of New England indicates that herring and sand lance have fluctuating populations, and often when one stock is depressed, the other is abundant, thus the two ecosystems act as alternate habitat to Stellwagen Bank for whales, dolphins, seals, sea birds, predatory fish, and other marine life that inhabit the Sanctuary. The revised management plan should assess the expansion of SBNMS boundaries to include all of Jeffreys Ledge.

Any consideration of boundary expansion should include analysis of appropriate management measures to be implemented within any newly included area(s). Management could include additional protective measures or simply enclosure within the Sanctuary. The extent of management actions within any new area(s) should be based on the reason for inclusion in the Sanctuary, and the specific conservation objectives to be achieved within.

(F) Continued Prohibitions

The revised management plan should continue current prohibitions on: sand and gravel extraction; exploration, development or production of industrial material, oil, and gas; and seabed disturbance.

(G) Revised Protocol For Issuance Of Special Permits

The revised management plan should revise the protocol for issuing special permits for projects such as laying fiber optic cable beneath the seabed, which occurred in SBNMS in 2001. Access through the Sanctuary for this project was granted to a private company in exchange for funds to support Sanctuary research and monitoring plans over the next ten years. Since then, this company has gone bankrupt and the availability of funds to support important Sanctuary programs is in question. Such access to the Sanctuary should not be allowed until a clear protocol is established for the issuance of such permits so that Sanctuary resources and activities are not put at risk, and the NMSA's mandate that permitted activities should be compatible with the primary goal of resource protection is upheld.

Any special permits should be carefully evaluated to identify potential adverse effects on Sanctuary resources. Such evaluations should use a precautionary approach and assess cumulative impacts over time and incorporate other activities occurring in and adjacent to the SBNMS. Applicants should be required to identify and characterize the types, levels and probabilities of potential impacts, and possible mitigating measures. Appropriate research and monitoring plans should also be developed. Depending on the nature of the project, options for restoring impacted Sanctuary resources after the project's life should also be identified and evaluated, including possible removal of any infrastructure or equipment and actions to restore affected habitats. Mechanisms and timelines for the Sanctuary's receipt of appropriate revenues, or financial or other compensation must be developed, and bonds against potential damages posted by the applicant where appropriate.

The protocol should include adequate opportunities for public review and input. Applications under consideration should be published in the Federal Register and subject to public hearings and comment. Any appeals process should also be subject to adequate public review.

(2) The Revised Management Plan Should Address Interagency Coordination and Jurisdictional Issues.

SBNMS should fully implement its duty to protect resources and manage uses compatible with that mandate, and use the MPR process to assess and revise as necessary the means to achieve this. The National Marine Sanctuaries Act explicitly recognizes that multiple regulatory agencies may share authority over Sanctuary resources and establishes as one of the primary purposes of the NMSA: "to provide authority for comprehensive and coordinated conservation and management of [Sanctuaries], and activities affecting them, in a manner which complements existing regulatory authorities." 16 U.S.C. §1431(b)(2).

During the scoping process, commenters suggested that the Sanctuary couldn't regulate commercial fishing activities. However, since the Sanctuary's designation, it has become clear that the effects of fishing on the Sanctuary's resources have not been adequately addressed to date to meet the mandate of the NMSA. Sanctuary managers can and should take all appropriate steps in cooperation with the NEFMC to regulate fishing activities within the Sanctuary, to ensure that SBNMS resources, both living and non-living, are protected and, where necessary, restored. Failure to address fishing activities within the Sanctuary is contrary to the stated purpose and provisions of the NMSA and the Sanctuary's adopted management plan, as noted in NOAA's response during designation to comments on the role of the Sanctuary and the NEFMC in regulating fisheries:

> "During the process of its consideration of Stellwagen Bank for Sanctuary designation, NOAA/NOS has identified fisheries as a resource of national significance, and is therefore obligated under Title III of the MPRSA (Marine Protection, Research and Sanctuaries Act of 1972) to ensure adequate mechanisms exist to properly manage and protect the long-term viability of this resource within the Sanctuary . . . .
> "NOAA does not agree that the regulatory language in the proposed Sanctuary Designation Document (Article VI, section 2) contradicts the intent of the MFCMA (Magnuson Fishery Management and Conservation Act) or that the MFCMA precludes the regulation of fishing within the sanctuaries under Title III of the MPRSA. The intent of the Designation Document language is that the Sanctuary shall be governed by valid regulations, which are the most protective of Sanctuary resources and qualities. This is wholly consistent with Title III and does not conflict with MFCMA."
>
> Final Environmental Impact Statement/Management Plan, Volume 2, appendix G, p. G13-14 (1993)(emphasis added).

Furthermore, the Sanctuary cannot fully carry out the purpose of the NMSA when reviewing management plans to "revise the management plan *and regulations* as necessary to fulfill the purposes and policies of this title" unless all activities within the Sanctuary are assessed for possible regulation, using the full public process afforded and coordinating with other agencies as required. 16 U.S.C. 1431 Sec. 304(e) (emphasis added).

The Ocean Conservancy supports efforts to improve coordination between agencies with overlapping jurisdictions such as NMFS. The Sanctuary should build on existing relationships with other agencies, managers and stakeholders such as the NEFMC, and actively engage them regarding efforts to best protect SBNMS resources from the effects of fishing. However, The Ocean Conservancy does not believe the Sanctuary can fulfill its statutory and regulatory responsibilities to protect Sanctuary resources by deferring to or relying solely on any other entity's management activities that affect Sanctuary resources.

(3) The Revised Management Plan Should Expand Research and Monitoring Efforts.

The Ocean Conservancy believes that all National Marine Sanctuaries should foster scientific inquiry to enhance resource management and public education. SBNMS has a

very important role to play in the New England region's marine science research and monitoring activities. The revised management plan should better reflect this role and develop the means to advance it. The Sanctuary should more effectively coordinate and encourage research in the Sanctuary, and identify specific research and monitoring programs that provide Sanctuary resource-related information to directly evaluate and guide management decisions, and enhance the efforts of other agencies and institutions. Such projects should include but are not limited to:

- Analyzing the impacts of bottom trawling and other fishing activities on Sanctuary habitats;
- Assessing fishery bycatch;
- Documenting the efficacy of "no-take" areas;
- Assessing impacts of the Boston Harbor outfall on fish, whales and other Sanctuary resources; and
- Studying impacts of human activities on marine mammals within the Sanctuary.

(4) The Revised Management Plan Should Increase and Strengthen Education and Outreach.

SBNMS is New England's only National Marine Sanctuary, yet a recent public opinion poll indicated that when New England residents were asked "how much, if anything, have you had heard about SBNMS," 76% indicated "not much/nothing at all" and 15% indicated "some." (Public Attitudes on Fully-Protected Ocean Areas in New England and Atlantic Canada, Edge Research, January 2002). As marine resource and conservation issues become more complicated, it becomes more important for citizens to know more about the marine environment and participate in management decisions.

The Sanctuary can and should do more to act as a focal point for education and outreach in New England and nationally. The revised management plan should reflect this and include actions to increase the Sanctuary's visibility. One such action could be establishing visitor centers in addition to the current two sites in Provincetown in other locations such as Gloucester, Boston, Portland, and Mystic, working in partnership with other institutions and organizations as much as possible to make efficient use of Sanctuary resources and leverage partnerships. The plan should consider actions to increase the Sanctuary's role in marine resource education through established programs and institutions such as the Gulf of Maine Marine Educators Association, the National Ocean Science Bowl, and regional colleges and universities. The plan should also provide for increased communication to the public building on existing Internet, publication, and other outreach efforts.

(5) The Revised Management Plan Should Provide Adequate Administrative Resources And Enforcement To Successfully Implement Programs.

The Revised Management Plan should include an itemized list of resources needed to support the fulfillment of the goals of the Sanctuary program and the SBNMS.
For example, SBNMS has made progress in its ability to house its operations since 1992 by recently acquiring a former Coast Guard station. However, much remains to be done to upgrade the facility and provide other resources necessary for the Sanctuary to successfully carry out its programs. The revised management plan should reflect the Sanctuary's need

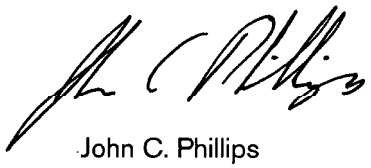
for the necessary platforms to carry out their programs, such as completed Sanctuary offices and meeting space, a larger research vessel to support research at this offshore site, and sufficient personnel to successfully implement Sanctuary programs.

Since 1992, the Sanctuary has developed cooperative enforcement arrangements with the Massachusetts Environmental Police and the Coast Guard Auxiliary, but there are still gaps in enforcement in this actively used Sanctuary. We encourage further development of shared enforcement authority with other agencies, but also believe that the revised management plan should consider establishing dedicated Sanctuary enforcement staff to fully support the Sanctuary's ability to protect resources and manage uses within its boundaries.

Conclusion

The Stellwagen Bank National Marine Sanctuary is a national as well as a New England treasure. We urge the National Oceanic and Atmospheric Administration to conduct a comprehensive review of the issues raised in this letter to strengthen management of this site and protect it for future generations. Thank you for your consideration of these comments.

Respectfully,



John C. Phillips
Director, New England Regional Office
The Ocean Conservancy

cc:

Dr. Craig MacDonald, SBNMS Superintendent
Senator Lincoln D. Chafee
Senator Susan M. Collins
Senator Christopher J. Dodd
Senator Judd Gregg
Senator Edward M. Kennedy
Senator John F. Kerry
Senator Joseph I. Lieberman
Senator Jack Reed
Senator Robert C. Smith
Senator Olympia J. Snowe
Congressman Thomas H. Allen
Congressman John E. Baldacci
Congressman Charles Bass
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Congressman William Delahunt
Congresswoman Rosa DeLauro
Congressman Barney Frank

Congressman Patrick J. Kennedy
Congressman James R. Langevin
Congressman Stephen F. Lynch
Congressman Edward J. Markey
Congressman Robert R. Simmons
Congressman John E. Sununu
Congressman John F. Tierney
Director Daniel J. Basta, National Marine Sanctuary System
Management Plan Coordinator, Edward Lindelof, National Marine Sanctuary System

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northeast Region
One Blackburn Drive
Gloucester, MA 01930

Craig D. MacDonald, Ph.D
Stellwagen Bank National
Marine Sanctuary
175 Edward Foster Rd.
Scituate, MA 02066

Gov't Fed

Dear Craig:

Thank you for the invitation to comment on issues facing the Stellwagen Bank National Marine Sanctuary during its first Management Plan Review. There are many issues of mutual concern that should provide partnering opportunities between the SBNMS and NOAA Fisheries' Northeast Regional Office (NER) relating to habitat conservation, sustainable fisheries, protected species and research. For example, during the recent scoping hearings, several commenters expressed a need for benchmark information to determine whether sea floor habitat is deteriorating or recovering. Through close collaboration the SBNMS and NER can leverage existing resources in such investigations to maximize the research return. Such research may allow progress to be made, for example in providing a more narrow scientifically based definition of essential fish habitat, or to provide a baseline index of habitat health, water quality, etc. To proceed from research into management, we will need to develop the scientific basis to respond to the public's questions in these areas.

In your determination of the best way forward for the SBNMS, consideration might first be given to a "freeze" on new activities in the Sanctuary, which should provide some stability to sanctuary resources in the near-term. For instance, new uses, particularly those of an industrial or extractive nature, would have to demonstrate that they would not substantially affect the sanctuary's resources before they would be permitted.

At the scoping hearing attended by NOAA Fisheries staff, there were several questions on the authority of the SBNMS to restrict fishing activity and commercial shipping within the sanctuary. The SBNMS should seek NOAA General Counsel legal guidance on whether the SBNMS acting alone, can restrict these activities and under what circumstances. This was not addressed in the *Management Plan Review Update*, nor during numerous public scoping meetings, and seems to be a source of confusion, misinformation and perhaps, unnecessary contention. This is important information to provide to stakeholders and to the Sanctuary Advisory Committee as it deliberates a new plan.

In addition to the question of legal authority, NOAA's policy on how restrictions on fishing activity will be addressed should be made clear in the new plan. Historically in this region the Fishery Management Council has been considered the appropriate external venue for such actions. Restrictions on fishing activity would include, for example, protection of cultural resources from fishing gear. There are many reasons to adopt this as standard operating

procedure, one of which is that fishers and other constituents can't be expected to spread themselves more thinly and often complain of the number of meetings requiring their attendance and resulting in lost work time. In addition, on regulatory issues, it makes good sense that there is "one NOAA voice." It is NOAA's responsibility to ensure that its separate line offices work internally to find the best ways to meet the goals of our respective programs.

Similarly, NOAA Fisheries shares with SBNMS concern for the welfare of marine mammals and endangered species within the sanctuary. We encourage the SBNMS to continue their support of existing regional efforts such as the North Atlantic Right Whale Consortium and the Atlantic Large Whale Take Reduction Team to improve NOAA's understanding of these animals and to better manage the human activities that effect them. Some additional areas for collaboration are:

1. Vessel strikes, harassment and behavioral disturbances - There are several ongoing Office of Protected Resources initiatives in these areas that would benefit from a stronger SBNMS and NOAA Fisheries linkage.

2. Speed limits - NOAA Fisheries has grappled with this issue; sharing lessons-learned and jointly exploring statutory authorities and outreach may offer new opportunities to protect endangered right whales.

3. Whale watching - Joint support for additional studies to investigate the effects of whale watching activities on whales may help address comments received during the first scoping exercise on whether densities and proximity of whale watching vessels interfere with whale feeding activity.

4. Sonic disturbance - Joint support for research to characterize the type of noise and levels in the Sanctuary.

Thank you again for the opportunity to comment. Working together should enable NOAA Fisheries and the Sanctuary Program to be more successful in administering our programs.

Sincerely,

Patricia Kurkul
Regional Administrator

Sample PMMRC L 579

Dr. Craig MacDonald
Sanctuary Superintendent
Stellwagen Bank National Marine Sanctuary
175 Edward Foster Road
Scituate, MA 02066

Dear Dr. MacDonald:

The goals and purposes of the National Marine Sanctuary Program are "to facilitate to the extent compatible with the **primary** objective of resource protection all public and private uses of the resources of these marine areas not prohibited pursuant to other authorities." We believe that resource protection should be the focus of Sanctuary activities and that human uses must not interfere with the primary objective.

Stellwagen Bank is a biodiverse area and management decisions should be based on the ecosystem, not on fisheries, or species-specific issues. Congress designated the Stellwagen Bank National Marine Sanctuary as a National Treasure and it must be treated as a protected area and managed for the conservation of species as well as for the health of the ecosystem.

Decisions should be made utilizing global information, as many of the inhabitants of the Sanctuary are seasonal and migratory in nature. Therefore, it is essential that the Sanctuary not only coordinates with the regional and international communities, but the Sanctuary should also have a strong participation in Fisheries management activities that impact the Sanctuary ecosystem.

Decisions regarding the Sanctuary need to go through a well-publicized and extensive public hearing process in order to encourage a wide range of participants at all meetings. All public comments and management decisions should be available on the Sanctuary website. All Sanctuary programs should be available for review on an annual basis and should be posted on the Sanctuary website for public comment and input.

Currently there are a number of potential activities that could negatively impact the marine species that utilize the Sanctuary waters. We believe that critical issues are: (Check all that are important to you)

- ☑ Reducing fixed gear fishing activities in areas when whales are present to minimize the risk of whales becoming entangled in gear.
- ☑ Speed limits within the Sanctuary must be imposed to protect animals from ship strikes.
- ☑ Vessels should not be able to dump waste, pump bilges, or dump ballast within the Sanctuary.
- ☑ Activities that adversely affect the seabed should be prohibited within the Sanctuary.
- ☑ Fishing and recreational vessels must adhere to the same whale watch guidelines and policies as commercial whale watching vessels.
- ☑ Personal watercraft including, but not limited to, kayaks and jet-skis, are improper equipment for whale-watching within the Sanctuary.
- ☑ Enforcement of rules and regulations in the Sanctuary is essential.
- ☑ A monitoring program is essential to understand the current health of the ecosystem and to identify any changes before a problem becomes critical.
- ☑ The Sanctuary should have strong participation in Fisheries management activities and decisions that impact the Sanctuary ecosystem.
- ☑ The Sanctuary must lead by example by reducing waste through the use of recycled goods; alternative energy; and other methods of minimizing waste.
- ☑ _____

Sincerely, STEVE MOREcRAFT

Date: 9/21/02

Street Address: 10 LARCH CLOSE KINGS WORTHY

City, State, Zip: WINCHESTER HAMPSHIRE UK

☐ I WOULD LIKE to receive information from the Sanctuary.
☐ Please do NOT add me to the Sanctuary mailing list.

John H Martin
83 Hathaway St
North Adams, MA 01247-2342

CitizenLetter®

An urgent message from a concerned citizen

October 19, 2002

Katrina Van Dine
Stellwagen Bank
National Marine Sanctuary
175 Edward Foster Road
Scituate, MA 02066

Sample 974

Dear Ms. Van Dine,

I am writing to urge you to fully protect Stellwagen Bank's most vulnerable ocean and wildlife habitats in the new Marine Sanctuary Management Plan.

This amazing ecosystem supports a diverse range of fish, endangered humpback whales and 40 species of seabirds. Although the bank's location within the Sanctuary protects it from oil drilling, it doesn't protect it from ocean waste dumping, destructive trawling, extreme human overuse and excessive fishing. New measures are needed to ensure the long-term health of the bank's marine life and habitats.

The bank should be protected by restricting those activities that harm wildlife or damage habitat. Setting aside certain fully protected areas within the Sanctuary will allow the ecosystem to recover and provide a safe haven for threatened species.

The current review of the management plan for Stellwagen presents an excellent opportunity to increase protections for this extremely special ocean habitat.

Please tell me how you intend to address this important issue.

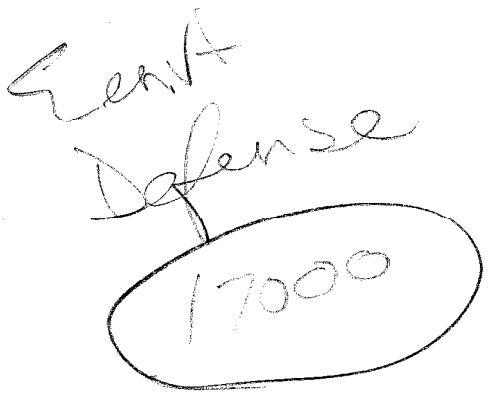
Sincerely,

John H Martin

CitizenLetters are a service of Working Assets®

2928 7/02 Printed on 100% post-consumer recycled paper with soy-based ink.

Subject: Support creation of fully protected areas within Stellwagen Bank National Marine Sanctuary
Resent-From: sbnmsplan@noaa.gov
Date: 26 Jul 2002 14:41:08 -0000
From: <grandej@vinfen.org>
To: sbnmsplan@noaa.gov



Superintendent Craig MacDonald
National Oceanic and Atmospheric Administration
175 Edward Foster Road
Scituate, MA 02055

Dear Superintendent Craig MacDonald,

I am concerned about habitat destruction and excessive fishing pressure in Stellwagen Bank National Marine Sanctuary, and write to register my support for the creation of fully protected ocean wildlife and habitat areas through the Sanctuary's management plan review process.

Stellwagen Bank is a unique ocean ecosystem that sustains a rich diversity of marine life. Pollution, excessive fishing pressure, and damaging fishing practices threaten the well being of these distinctive creatures and critical habitats. Stellwagen Bank receives important protections as a national marine sanctuary; however, new measures are needed to help restore declining fisheries and preserve habitat.

Compelling scientific evidence supports the establishment of fully protected ocean wildlife and habitat areas as a way to address these problems. By leaving a portion of our coastal waters undisturbed, ocean wildlife and habitat areas can restore biological diversity and provide a safe haven for species now in decline. The resulting protected areas can also provide tangible, long-term benefits to fishermen. New England's economy and future depend on a healthy marine environment.

Please register my support for the creation of fully protected ocean wildlife and habitat areas within Stellwagen Bank National Marine Sanctuary.

Sincerely,

Jennifer Grande
21B Anawon Road
Plymouth, Massachusetts 02360

Total Count 430

Stronger Conservation Letter:

From: <dillherde@aol.com>
Date: Fri, 18 Oct 2002 12:44:42 +0800
Message-ID: <2139262.1034970811781.JavaMail.sean.ctsg.com@eug-app01>
To: sbnmsplan@noaa.gov
Subject: Stronger Conservation for Stellwagen Bank National Marine Sanctuary
Precedence: list
Resent-From: sbnmsplan@noaa.gov

October 18, 2002

Dear Craig McDonald ,

I would like to submit the following public comments as you prepare the revised management plan for the Stellwagen Bank National Marine Sanctuary. As New England's only National Marine Sanctuary, I feel it is vitally important to strengthen the existing management plan to ensure it achieves its primary purpose to protect the productive marine habitats and the myriad of marine life found within Stellwagen.

The existing management plan fails to regulate most commercial activities affecting the marine resources within Stellwagen =96 even those that are known to damage the seafloor and remove large amounts of marine life from the Sanctuary. Threats to the Sanctuary's resources include certain destructive fishing practices, which can damage the seafloor and locally deplete fish and important prey species, shipping traffic, and wastewater discharges from the greater Boston area. I believe that the new management plan should include measures to significantly reduce these threats. I would also encourage the Sanctuary program to initiate discussions within the community about establishing fully protected marine areas within the Sanctuary boundaries.

Sincerely,

Robin Dill-Herde
379 Kent Cornwall Rd
Kent, CT 06757

Stellwagen Bank National Marine Sanctuary
MPR Coordinator
175 Edward Foster Road
Scituate, MA 02066

September 2002

Dear MPR Coordinator:

I am writing to ask that the Stellwagen Bank National Marine Sanctuary extend its boundaries to include the full length of Jeffreys Ledge as it revises its management plan in the coming months.

Currently only the southern 1/3 of Jeffreys Ledge is included in the sanctuary boundary. It makes little sense to afford Sanctuary status to only this portion of what is, in its entirety, a critical marine habitat. Arguments to extend this protection to the remainder of the Ledge include:

- It is the most important spawning habitat for Gulf of Maine herring, which are a primary prey item for many marine predators including marine mammals, predatory fish, and commercially important ground fish;

- It is an important fall feeding habitat for northern right whales, one of the most critically endangered whales in the world;

- It acts as a "buffer" ecosystem to Stellwagen Bank in years when prey productivity is low in other portions of the Sanctuary;

- It is vulnerable to the effects of highly developed coastal cities, which in this case includes Portsmouth, N.H., and Portland, ME.

Including Jeffreys Ledge in the Stellwagen Bank Sanctuary would be a major stride towards protecting the marine resources of New England, and I encourage you to take this vital step.

Sincerely,

Charles G. Mori
180 Post Road
Greenland, N.H. 03840

Please **do / do not** (circle one) send me further information about the Stellwagen Bank Management Plan Review as the process continues.

Stellwagen Bank National Marine Sanctuary
MPR Coordinator
175 Edward Foster Road
Scituate, MA 02066

Ruth Lanham
P.O. Box 122
New Castle, N.H. 03854

September 2002

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Sincerely,

Ruth Lanham

Please **do / do not** (circle one) send me further information about the Stellwagen Bank Management Plan Review as the process continues.